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National Aeronautics and
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Foreword

JPL Bibliography 39-28 describes and indexes by primary author the externally distributed technical reporting, released during calendar year 1986, that resulted from scientific and engineering work performed, or managed, by the Jet Propulsion Laboratory. Three classes of publications are included:

- (1) JPL Publications (84-, 85-, 86-series, etc.), in which the information is complete for a specific accomplishment. Publications can be tailored to wide or limited audiences and be presented in an established standard format or special format to meet unique requirements.
- (2) Articles from the quarterly *Telecommunications and Data Acquisition (TDA) Progress Report* (42-series). Each collection of articles in this class of publication presents a periodic survey of current accomplishments by the Deep Space Network as well as other developments in Earth-based radio technology.
- (3) Articles published in the open literature.

Effective January 1977, the "JPL Publication" replaced the Technical Report, Technical Memorandum, and Special Publication. However, the discontinued classes may still appear in future issues of the Bibliography if succeeding volumes or revisions are published in their former series.

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Contents

JPL Publications	1
Progress Reports	4
Open Literature	12

PRECEDING PAGE BLANK NOT FILMED

JPL Publications

Ansbaugh, B. E., and R. S. Weiss,
Results of the 1986 NASA/JPL Balloon Flight Solar Cell Calibration Program,
JPL Publication 86-42, November 1, 1986.

Bahrami, K. A., H. Kirkham, and S. Rahman,
Distribution System Simulator,
JPL Publication 86-41, August 15, 1986.
(Prepared for the U.S. Department of Energy.)

Cuddihy, E. F.,
The Aging Correlation ($RH + t$): Relative Humidity (%) + Temperature ($^{\circ}C$),
JPL Publication 86-7, January 15, 1986.
(Prepared for the U.S. Department of Energy.)

Davarian, F.,
Tone Calibration Technique: A Digital Signaling Scheme for Mobile Applications,
JPL Publication 86-40, September 15, 1986.

Davarian, F., and J. Sumida,
Coherent Versus Noncoherent Signaling for Satellite-Aided Mobile Communications,
JPL Publication 86-43, October 15, 1986.

Divsalar, D., and M. K. Simon,
Multiple Trellis Coded Modulation (MTCM): An MSAT-X Report,
JPL Publication 86-44, November 15, 1986.

Divsalar, D., and M. K. Simon,
Trellis Coded Modulation for 4800 to 9600 bps Transmission Over a Fading Satellite Channel,
JPL Publication 86-8, June 1, 1986.

Edmonds, L.,
Approximations Useful for the Prediction of Electrostatic Discharges for Simple Electrode Geometries,
JPL Publication 86-36, August 15, 1986.

Ford, J. P., J. B. Cimino, B. Holt, and M. R. Ruzek,
Shuttle Imaging Radar Views the Earth From Challenger: The SIR-B Experiment,
JPL Publication 86-10, March 15, 1986.

Glavich, T. A.,
Centroid Tracking With Area Array Detectors,
JPL Publication 86-21, June 1, 1986.
(Prepared for the U.S. Department of Defense.)

Halpert, G., S. Surampudi, and J. J. Rowlette,
The NASA Aerospace Battery Safety Handbook,
JPL Publication 86-14, July 15, 1986.

Hoover, G., and A. B. Kahle,
A Portable Spectrometer for Use From 5 to 15 Micrometers,
JPL Publication 86-19, July 1, 1986.

Jet Propulsion Laboratory,
Archive of Observations of Periodic Comet Crommelin: Made During Its 1983-84 Apparition,
JPL Publication 86-2, December 15, 1985.

Jet Propulsion Laboratory,
The Case for Mars: Concept Development for a Mars Research Station,
JPL Publication 86-28, April 15, 1986.

Jet Propulsion Laboratory,
Energy Conversion and Utilization Technologies Program: Biocatalysis Project Annual Report FY 1985,
JPL Publication 86-32, July 30, 1986.
(Prepared for the U.S. Department of Energy.)

Jet Propulsion Laboratory,
The Large Deployable Reflector (LDR) Report of the Science Coordination Group,
JPL Publication 86-46, October 1, 1986.

Jet Propulsion Laboratory,
NASA/JPL Aircraft SAR Operations for 1984 and 1985,
JPL Publication 86-20, November 1, 1986.

Jet Propulsion Laboratory,
Proceedings of the Flat-Plate Solar Array Project Workshop on Low-Cost Polysilicon for Terrestrial Photovoltaic Solar-Cell Applications (October 28-30, 1985, at Las Vegas, Nevada),
JPL Publication 86-11, February 1986.
(Prepared for the U.S. Department of Energy.)

Jet Propulsion Laboratory,
Proceedings of the Second Airborne Imaging Spectrometer Data Analysis Workshop: May 6, 7, 8, 1986,
JPL Publication 86-35, August 15, 1986.

Jet Propulsion Laboratory,
Progress Report 25 for the Period October 1984 to June 1985 and Proceedings of the 25th Project Integration Meeting,
JPL Publication 86-4.
(Prepared for the U.S. Department of Energy.)

Jet Propulsion Laboratory,
Progress Report 26 for the Period July 1985 to April 1986 and Proceedings of the 26th Project Integration Meeting,
JPL Publication 86-23.
(Prepared for the U.S. Department of Energy.)

Jet Propulsion Laboratory,
The Second Spaceborne Imaging Radar Symposium: April 28-30, 1986, Jet Propulsion Laboratory,
JPL Publication 86-26, December 1, 1986.

Jet Propulsion Laboratory,
Shuttle Imaging Radar-C Science Plan,
JPL Publication 86-29, September 1, 1986.

Jet Propulsion Laboratory,
Space Technology Plasma Issues in 2001,
JPL Publication 86-49, October 1, 1986.

Jet Propulsion Laboratory,
The TIMS Data User's Workshop June 18 and 19, 1985: National Space Technology Laboratories Mississippi,
JPL Publication 86-38, November 1, 1986.

Johnston, A. R., S. P. Jackson, H. Kirkham, and C. Yeh,
Power System Applications of Fiber Optic Sensors,
JPL Publication 86-22, June 1986.
(Prepared for the U. S. Department of Energy.)

Koenig, J. L., F. J. Boerio, E. P. Plueddemann, J. Miller, P. B. Willis, and E. F. Cuddihy,
Chemical Bonding Technology: Direct Investigation of Interfacial Bonds,
JPL Publication 86-6, January 1986.
(Prepared for the U.S. Department of Energy.)

Leung, K., T. Bicknell, and K. Vines,
ERS-1 SAR Data Processing,
JPL Publication 86-33, September 1, 1986.

Liu, W. T., and D. R. Mock,
Evaluation of Geophysical Parameters Measured by the Nimbus-7 Microwave Radiometer for the TOGA Heat Exchange Project,
JPL Publication 86-50, December 1, 1986.

Muller, P. M., and W. L. Sjogren,
User's Guide to the JPL Doppler Gravity Database,
JPL Publication 86-16, August 1, 1986.

Nichols, J. D., and J. R. Warren (U.S. Department of Agriculture Forest Service),
Conceptual Design Study: Forest Fire Advanced System Technology (FFAST),
JPL Publication 86-5, February 15, 1986.
(Prepared for the U.S. Department of Agriculture.)

Rodriguez, G.,
Kalman Filtering, Smoothing and Recursive Robot Arm Forward and Inverse Dynamics,
JPL Publication 86-48, December 1, 1986.

Rohatgi, N. K.,
Silicon Production in a Fluidized Bed Reactor: Final Report,
JPL Publication 86-17, April 1986.
(Prepared for the U.S. Department of Energy.)

Simon, M., and A. Mileant,
Steady-State Probability Density Function of the Phase Error for a DPLL With an Integrate-and-Dump Device,
JPL Publication 86-3, April 15, 1986.

Sovers, O. J., and J. L. Fanselow,
Observation Model and Parameter Partial for the JPL VLBI Parameter Estimation Software "MASTERFIT"-1986,
JPL Publication 83-39, Rev. 2, August 1, 1986.

Stearns, J.,
Solar Stirling Receiver Alternatives for the Terrestrial Solar Application,
JPL Publication 86-13, April 30, 1986.
(Prepared for the U.S. Department of Energy.)

Stewart, R., L.-L. Fu, and M. Lefebvre (Centre Spatial de Toulouse),
Science Opportunities From the Topex / Poseidon Mission,
JPL Publication 86-18, July 15, 1986.

Surampudi, S., G. Halpert, and I. Stein,
Safety Considerations of Lithium-Thionyl Chloride
Cells,
JPL Publication 86-15, June 1, 1986.

Thomas, V. C.,
Vibroacoustic Payload Environment Prediction
System (VAPEPS): Data Base Management Center
Remote Access Guide,
JPL Publication 86-39, September 15, 1986.
(Prepared for the U.S. Department of Air Force,
Space Division.)

Progress Reports

Aguirre, S., D. H. Brown, and W. J. Hurd,
"Phase Lock Acquisition for Sampled Data PLLs
Using the Sweep Technique,"
*The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986,*
pp. 95-102, August 15, 1986.

Aguirre, S., W. J. Hurd, R. Kumar, and J. Statman,
"A Comparison of Methods for DPLL Loop Filter
Design,"
*The Telecommunications and Data Acquisition
Progress Report 42-87: July Through September 1986,*
pp. 114-124, November 15, 1986.

Ahlstrom, H. G., P. S. Hames, and F. J. Menninger,
"Reverse Osmosis Water Purification System,"
*The Telecommunications and Data Acquisition
Progress Report 42-85: January Through March 1986,*
pp. 181-190, May 15, 1986.

Amorose, R. J.,
"Network Functions and Facilities,"
*The Telecommunications and Data Acquisition
Progress Report 42-88: October Through December
1986,*
pp. 213-215, February 15, 1987.

Bathker, D. A., and H. F. Reilly,
"A Prototype DSN X/S-Band Feed: Model III
Development,"
*The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986,*
pp. 26-32, August 15, 1986.

Bautista, J. J., and D. M. Strayer,
"Microwave Surface Resistance of Reactively
Sputtered NbN Thin Films,"
*The Telecommunications and Data Acquisition
Progress Report 42-88: October Through December
1986,*
pp. 24-28, February 15, 1987.

**Blank, S. J. (Center for Technology, Israel), and
W. A. Imbriale,**
"Array Feed Synthesis for Correction of Reflector
Distortion and Vernier Beamsteering,"
*The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986,*
pp. 43-55, August 15, 1986.

Boss, P., D. Hoppe, and A. Bhanji,
"Phase Noise Measurements of the 400-kW, 2.115-
GHz (S-Band) Transmitter,"
*The Telecommunications and Data Acquisition
Progress Report 42-88: October Through December
1986,*
pp. 17-23, February 15, 1987.

**Brown, D. W., H. W. Cooper, J. W. Armstrong, and
S. S. Kent,**
"Parkes-CDSCC Telemetry Array: Equipment
Design,"
*The Telecommunications and Data Acquisition
Progress Report 42-85: January Through March 1986,*
pp. 85-110, May 15, 1986.

Cha, A. G.,
"Physical Optics Analysis of a Four-Reflector
Antenna: Part 2,"
*The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986,*
pp. 231-243, August 15, 1986.

Chian, C. T., J. J. Cucchissi, and R. Levy,
"Stability Investigation of the Quadripod Structure
for the NASA/JPL 70-Meter Antenna,"
*The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986,*
pp. 33-42, August 15, 1986.

Clauss, R. C., and J. G. Smith,
"Beam Waveguides in the Deep Space Network,"
*The Telecommunications and Data Acquisition
Progress Report 42-88: October Through December
1986,*
pp. 174-182, February 15, 1987.

Conroy, B. L., H. Schleier, and T. Tesarek,
"Thermal Evaluation Method for Klystron RF
Power,"
*The Telecommunications and Data Acquisition
Progress Report 42-88: October Through December
1986,*
pp. 91-95, February 15, 1987.

**Cooper, H. W., and L. R. Hileman (Telos
Corporation),**
"Software Development for the VLA-GDSCC
Telemetry Array Project,"
*The Telecommunications and Data Acquisition
Progress Report 42-87: July Through September 1986,*
pp. 174-178, November 15, 1986.

Davidson, J. M., C. L. Thornton, T. H. Dixon, C. J. Vegos, L. E. Young, and T. P. Yunk,
"The March 1985 Demonstration of the Fiducial Network Concept for GPS Geodesy: A Preliminary Report,"
The Telecommunications and Data Acquisition Progress Report 42-85: January Through March 1986, pp. 212-218, May 15, 1986.

Davidson, J. M., C. L. Thornton, S. A. Stephens, S. -C. Wu, S. M. Lichten, J. S. Border, O. J. Sovers, T. H. Dixon, and B. G. Williams,
"Demonstration of the Fiducial Concept Using Data From the March 1985 GPS Field Test,"
The Telecommunications and Data Acquisition Progress Report 42-86: April Through June 1986, pp. 301-306, August 15, 1986.

DeGroot, N. F.,
"Ka-Band (32 GHz) Allocations for Deep Space,"
The Telecommunications and Data Acquisition Progress Report 42-88: October Through December 1986, pp. 104-109, February 15, 1987.

Deutsch, L. J., and C. R. Lahmeyer,
"A Systolic Architecture for the Correlation and Accumulation of Digital Sequences,"
The Telecommunications and Data Acquisition Progress Report 42-85: January Through March 1986, pp. 62-68, May 15, 1986.

Dolinar, S. J.,
"Cramer-Rao Bounds for Signal-to-Noise Ratio and Combiner Weight Estimation,"
The Telecommunications and Data Acquisition Progress Report 42-86: April Through June 1986, pp. 124-130, August 15, 1986.

Efron, L., R. J. Muellerschoen, and R. I. Premkumar,
"ICE Navigation Support,"
The Telecommunications and Data Acquisition Progress Report 42-86: April Through June 1986, pp. 268-283, August 15, 1986.

Ellis, J.,
"HEO Multimission Navigation Concept,"
The Telecommunications and Data Acquisition Progress Report 42-86: April Through June 1986, pp. 261-267, August 15, 1986.

Ellis, J., and T. P. McElrath,
"VEGA Pathfinder Navigation for Giotto Halley Encounter,"
The Telecommunications and Data Acquisition Progress Report 42-87: July Through September 1986, pp. 268-278, November 15, 1986.

Fanelli, N. A., L. Efron, and R. J. Muellerschoen,
"ICE Second Halley Radial: TDA Mission Support and DSN Operations,"
The Telecommunications and Data Acquisition Progress Report 42-87: July Through September 1986, pp. 285-290, November 15, 1986.

Foster, C.,
"Unattended Deep Space Station Tracking Station Development: Monitor and Control Technology,"
The Telecommunications and Data Acquisition Progress Report 42-86: April Through June 1986, pp. 164-170, August 15, 1986.

Greenhall, C. A.,
"Frequency Stability Review,"
The Telecommunications and Data Acquisition Progress Report 42-88: October Through December 1986, pp. 200-212, February 15, 1987.

Griswold, T. W., and D. F. Hendry,
"Ulysses, a Functional Description and Simulation Software System,"
The Telecommunications and Data Acquisition Progress Report 42-86: April Through June 1986, pp. 193-202, August 15, 1986.

Guiar, C. N., F. L. Lansing, and R. Riggs,
"Antenna Pointing Systematic Error Model Derivations,"
The Telecommunications and Data Acquisition Progress Report 42-88: October Through December 1986, pp. 36-46, February 15, 1987.

Gulkis, S., M. J. Klein, E. T. Olson, R. B. Crow, R. M. Gosline, G. S. Downs, M. P. Quirk, A. Lokshin, and J. Solomon,
"Objectives and First Results of the NASA SETI Sky Survey Field Tests at Goldstone,"
The Telecommunications and Data Acquisition Progress Report 42-86: April Through June 1986, pp. 284-293, August 15, 1986.

Halperin, A., and P. Stelzmuller,
"HVAC Modifications and Computerized Energy
Analysis for the Operations Support Building at the
Mars Deep Space Station at Goldstone,"
*The Telecommunications and Data Acquisition
Progress Report 42-85: January Through March 1986*,
pp. 157–180, May 15, 1986.

Hansen, D. M., and A. J. Kliore,
"Ka-Band (32 GHz) Benefits to Planned Missions,"
*The Telecommunications and Data Acquisition
Progress Report 42-88: October Through December
1986*,
pp. 110–119, February 15, 1987.

Hemmati, H.,
"Single Longitudinal Mode Operation of
Semiconductor Laser Arrays With Etalon Control,"
*The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986*,
pp. 66–69, August 15, 1986.

Hoppe, D.,
"Directional Couplers for Detecting TE_{11} and
 TE_{12} Circular Waveguide Modes,"
*The Telecommunications and Data Acquisition
Progress Report 42-88: October Through December
1986*,
pp. 11–16, February 15, 1987.

Hoppe, D. J., and A. M. Bhanji,
"Long-Term Amplitude and Phase Stability of the
400-kW 2.115-GHz Transmitter,"
*The Telecommunications and Data Acquisition
Progress Report 42-87: July Through September 1986*,
pp. 81–91, November 15, 1986.

**Hsu, I. S., T. K. Truong, and I. S. Reed (University
of Southern California),**
"A VLSI Architecture for Performing Finite Field
Arithmetic With Reduced Table Look-Up,"
*The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986*,
pp. 143–154, August 15, 1986.

**Hsu, I. S., T. K. Truong, H. M. Shao, and
L. J. Deutsch,**
"A Single VLSI Chip for Computing Syndromes in
the (255,223) Reed–Solomon Decoder,"
*The Telecommunications and Data Acquisition
Progress Report 42-87: July Through September 1986*,
pp. 98–103, November 15, 1986.

Hurd, W. J., and S. Aguirre,
"A Method to Dramatically Improve Subcarrier
Tracking,"
*The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986*,
pp. 103–110, August 15, 1986.

**Hurd, W. J., J. Rabkin, M. D. Russell, B. Siev,
H. W. Cooper, T. O. Anderson, and P. U. Winter,**
"Antenna Arraying of Voyager Telemetry Signals
by Symbol Stream Combining,"
*The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986*,
pp. 131–142, August 15, 1986.

**Imbriale, W. A., A. M. Bhanji, S. Blank,
V. B. Lobb, R. Levy, and S. A. Rocci,**
"Ka-Band (32 GHz) Performance of 70-Meter
Antennas in the Deep Space Network,"
*The Telecommunications and Data Acquisition
Progress Report 42-88: October Through December
1986*,
pp. 126–134, February 15, 1987.

Johnson, D. L.,
"1- to 4-K Refrigeration Techniques for Cooling
Masers on a Beam Waveguide Antenna,"
*The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986*,
pp. 56–65, August 15, 1986.

Kalson, S.,
"Choosing Channel Quantization Levels and Viterbi
Decoding for Space Diversity Reception Over the
Additive White Gaussian Noise Channel,"
*The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986*,
pp. 90–94, August 15, 1986.

Kalson, S., and S. J. Dolinar,
"Maximum Likelihood Estimation of Signal-to-
Noise Ratio and Combiner Weight,"
*The Telecommunications and Data Acquisition
Progress Report 42-85: January Through March 1986*,
pp. 32–41, May 15, 1986.

Katow, M. S.,
"New Short-Time Alignment Technique for 70-
Meter Antenna Surface Panels,"
*The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986*,
pp. 15–25, August 15, 1986.

Katow, S., J. J. Cucchissi, K. L. Chuang, R. Levy, F. L. Lansing, F. W. Stoller, and F. Menninger,
"Structural Design Options for the New 34 Meter Beam Waveguide Antenna,"
The Telecommunications and Data Acquisition Progress Report 42-88: October Through December 1986,
pp. 183-192, February 15, 1987.

Katz, J.,
"Planets as Background Noise Sources in Free Space Optical Communications,"
The Telecommunications and Data Acquisition Progress Report 42-85: January Through March 1986,
pp. 13-24, May 15, 1986.

Kerr, E. L.,
"Fraunhofer Filters to Reduce Solar Background for Optical Communications,"
The Telecommunications and Data Acquisition Progress Report 42-87: July Through September 1986,
pp. 48-55, November 15, 1986.

Kiedron, K., C. T. Chian, and K. L. Chuang,
"Statistical Analysis of the 70 Meter Antenna Surface Distortions,"
The Telecommunications and Data Acquisition Progress Report 42-88: October Through December 1986,
pp. 29-35, February 15, 1987.

Koerner, M. A.,
"Relative Performance of 8.5-GHz and 32-GHz Telemetry Links on the Basis of Total Data Return per Pass,"
The Telecommunications and Data Acquisition Progress Report 42-87: July Through September 1986,
pp. 65-80, November 15, 1986.

Kumar, R.,
"Fast Frequency Acquisition via Adaptive Least Squares Algorithm,"
The Telecommunications and Data Acquisition Progress Report 42-85: January Through March 1986,
pp. 53-61, May 15, 1986.

Kumar, R., and W. J. Hurd,
"Fixed Lag Smoothers for Carrier Phase and Frequency Tracking,"
The Telecommunications and Data Acquisition Progress Report 42-88: October Through December 1986,
pp. 67-78, February 15, 1987.

Lanyi, G.,
"Total Ionospheric Electron Content Calibration Using SERIES GPS Satellite Data,"
The Telecommunications and Data Acquisition Progress Report 42-85: January Through March 1986,
pp. 1-12, May 15, 1986.

Layland, J. W., and J. G. Smith,
"A Growth Path for Deep Space Communications,"
The Telecommunications and Data Acquisition Progress Report 42-88: October Through December 1986,
pp. 120-125, February 15, 1987.

Leflang, J. G.,
"An Overview of the Mark IVA Monitor and Control System,"
The Telecommunications and Data Acquisition Progress Report 42-88: October Through December 1986,
pp. 193-199, February 15, 1987.

Lesh, J. R., W. K. Marshall, and J. Katz,
"A Simple Method for Designing or Analyzing an Optical Communication Link,"
The Telecommunications and Data Acquisition Progress Report 42-85: January Through March 1986,
pp. 25-31, May 15, 1986.

Lesh, J. R., and D. L. Robinson,
"A Cost-Performance Model for Ground-Based Optical Communications Receiving Telescopes,"
The Telecommunications and Data Acquisition Progress Report 42-87: July Through September 1986,
pp. 56-64, November 15, 1986.

Liewer, K. M.,
"Selection of Radio Sources for Venus Balloon-Pathfinder Δ DOR Navigation at 1.7 GHz,"
The Telecommunications and Data Acquisition Progress Report 42-87: July Through September 1986,
pp. 279-284, November 15, 1986.

Lutes, G., and A. Kirk,
"Reference Frequency Transmission Over Optical Fiber,"
The Telecommunications and Data Acquisition Progress Report 42-87: July Through September 1986,
pp. 1-9, November 15, 1986.

Manshadi, F.,
"X-Band Preamplifier Filter,"
The Telecommunications and Data Acquisition Progress Report 42-86: April Through June 1986,
pp. 227-230, August 15, 1986.

Manshadi, F., D. A. Bathker, and H. W. Marlin,
"VLA Feedhorn for Voyager Encounter of Neptune,"
The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986,
pp. 216–226, August 15, 1986.

Marlin, H., A. Freiley, and R. Hartop,
"X-Band Uplink Feedcone Capabilities,
Components, and Layout,"
The Telecommunications and Data Acquisition
Progress Report 42-87: July Through September 1986,
pp. 140–148, November 15, 1986.

Marshall, W. K., and B. D. Burk,
"Received Optical Power Calculations for Optical
Communications Link Performance Analysis,"
The Telecommunications and Data Acquisition
Progress Report 42-87: July Through September 1986,
pp. 32–40, November 15, 1986.

**Merrick, W. D., V. B. Lobb, F. L. Lansing, and
F. W. Stoller,**
"Riveted Panel Surface Measurement Using
Photogrammetry,"
The Telecommunications and Data Acquisition
Progress Report 42-87: July Through September 1986,
pp. 193–205, November 15, 1986.

Mileant, A., and M. Simon,
"Improved Performance of a Digital Phase-Locked
Loop Combined With a Frequency/Frequency-Rate
Estimator,"
The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986,
pp. 203–215, August 15, 1986.

**Morabito, D. D., A. E. Niell (Haystack Observatory,
Massachusetts), R. A. Preston, R. P. Linfield,
A. E. Wehrle (University of California, Los
Angeles), and J. Faulkner (University of Southern
California),**
"VLBI Observations for 416 Extragalactic Radio
Sources,"
The Telecommunications and Data Acquisition
Progress Report 42-85: January Through March 1986,
pp. 69–84, May 15, 1986.

Mottinger, N. A., and R. I. Premkumar,
"Giotto Navigation Support,"
The Telecommunications and Data Acquisition
Progress Report 42-87: July Through September 1986,
pp. 249–262, November 15, 1986.

**Nickerson, J. A., D. G. Cox, H. K. Smith, J. H.
Engle, and H. G. Ahlstrom,**
"Antenna Servo Control System Characterization:
Rate Loop Analysis for 34-m Antenna at DSS 15,"
The Telecommunications and Data Acquisition
Progress Report 42-87: July Through September 1986,
pp. 165–173, November 15, 1986.

Olson, E. M.,
"Prototyping and Implementing Flight Qualifiable
Semicustom CMOS P-Well Bulk Integrated Circuits
in the JPL Environment,"
The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986,
pp. 181–192, August 15, 1986.

Olson, E. M., and L. J. Deutsch,
"A System for the Functional Testing and
Simulation of Custom and Semicustom VLSI Chips,"
The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986,
pp. 171–180, August 15, 1986.

Olson, N. E., R. F. Jurgens, and J. L. Robinett,
"Fast Magnetic Tape Utilities for VAX/VMS
Computers,"
The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986,
pp. 294–300, August 15, 1986.

Otoshi, T. Y., and M. M. Franco,
"DSS 13 Frequency Stability Tests Performed
During May 1985 Through March 1986,"
The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986,
pp. 1–14, August 15, 1986.

Pollara, F.,
"Erasure Declaring Viterbi Decoders,"
The Telecommunications and Data Acquisition
Progress Report 42-88: October Through December
1986,
pp. 47–51, February 15, 1987.

Pompa, M. F.,
"The New 34-Meter Antenna,"
The Telecommunications and Data Acquisition
Progress Report 42-85: January Through March 1986,
pp. 127–138, May 15, 1986.

Reed, I. S. (University of Southern California), I. S. Hsu, and T. K. Truong,
"A VLSI Architecture of a Binary Updown Counter,"
The Telecommunications and Data Acquisition Progress Report 42-88: October Through December 1986,
pp. 52-58, February 15, 1987.

Riley, A. L.,
"Ka-Band (32 GHz) Spacecraft Development Plan,"
The Telecommunications and Data Acquisition Progress Report 42-88: October Through December 1986,
pp. 164-173, February 15, 1987.

Riley, A. L., D. M. Hansen, A. Mileant, and R. W. Hartop,
"A Ka-Band (32 GHz) Beacon Link Experiment (KABLE) With Mars Observer,"
The Telecommunications and Data Acquisition Progress Report 42-88: October Through December 1986,
pp. 141-147, February 15, 1987.

Robinson, D. L., and B. D. Metscher,
"A Cooled Avalanche Photodiode With High Photon Detection Probability,"
The Telecommunications and Data Acquisition Progress Report 42-87: July Through September 1986,
pp. 41-47, November 15, 1986.

Robinson, S. E.,
"A New Algorithm for Microwave Delay Estimation From Water Vapor Radiometer Data,"
The Telecommunications and Data Acquisition Progress Report 42-87: July Through September 1986,
pp. 149-157, November 15, 1986.

Rochblatt, D. J., Y. Rahmat-Samii, and J. H. Mumford,
"DSN Microwave Antenna Holography, Part II: Data Processing and Display of High-Resolution Effective Maps,"
The Telecommunications and Data Acquisition Progress Report 42-87: July Through September 1986,
pp. 92-97, November 15, 1986.

Sadr, R., and W. Hurd,
"Filter Distortion Effects on Telemetry Signal-to-Noise Ratio,"
The Telecommunications and Data Acquisition Progress Report 42-88: October Through December 1986,
pp. 59-66, February 15, 1987.

Satorius, E. H., M. J. Grimm, G. A. Zimmerman, and H. C. Wilck,
"Finite Wordlength Implementation of a Megachannel Digital Spectrum Analyzer,"
The Telecommunications and Data Acquisition Progress Report 42-86: April Through June 1986,
pp. 244-254, August 15, 1986.

Shahshahani, M., and L. Swanson,
"A New Method for Frame Synchronization,"
The Telecommunications and Data Acquisition Progress Report 42-86: April Through June 1986,
pp. 111-123, August 15, 1986.

Simon, M., and A. Mileant,
"DSA's Subcarrier Demodulation Losses,"
The Telecommunications and Data Acquisition Progress Report 42-85: January Through March 1986,
pp. 111-117, May 15, 1986.

Simon, M. K., and A. Mileant,
"Real-Time Combiner Loss,"
The Telecommunications and Data Acquisition Progress Report 42-87: July Through September 1986,
pp. 179-184, November 15, 1986.

Simon, M. K., and A. Mileant,
"SNR Estimation for the Baseband Assembly,"
The Telecommunications and Data Acquisition Progress Report 42-85: January Through March 1986,
pp. 118-126, May 15, 1986.

Slobin, S. D.,
"Models of Weather Effects on Noise Temperature and Attenuation for Ka- and X-Band Telemetry Performance Analysis,"
The Telecommunications and Data Acquisition Progress Report 42-88: October Through December 1986,
pp. 135-140, February 15, 1987.

Slobin, S. D., and E. M. Andres,
"PPM/NAR 8.4-GHz Noise Temperature Statistics for DSN 64-Meter Antennas, 1982-1984,"
The Telecommunications and Data Acquisition Progress Report 42-87: July Through September 1986,
pp. 185-192, November 15, 1986.

Smith, E. K., and W. L. Flock,
"Propagation Through Martian Dust at 8.5 and 32 GHz,"
The Telecommunications and Data Acquisition Progress Report 42-87: July Through September 1986,
pp. 291-299, November 15, 1986.

Smith, J. G.,
"Ka-Band (32-GHz) Downlink Capability for Deep Space Communications,"
The Telecommunications and Data Acquisition Progress Report 42-88: October Through December 1986,
pp. 96-103, February 15, 1987.

Smith, J. G.,
"Proposed Upgrade of the Deep Space Network Research and Development Station,"
The Telecommunications and Data Acquisition Progress Report 42-88: October Through December 1986,
pp. 158-163, February 15, 1987.

Stanton, P. H., and F. Manshadi,
"Harmonic Measurements of the Galileo Spacecraft X-Band Transmitter System,"
The Telecommunications and Data Acquisition Progress Report 42-88: October Through December 1986,
pp. 148-157, February 15, 1987.

Statman, J. I.,
"A Recursive Solution for a Fading Memory Filter Derived From Kalman Filter Theory,"
The Telecommunications and Data Acquisition Progress Report 42-86: April Through June 1986,
pp. 70-76, August 15, 1986.

Statman, J. I., and W. J. Hurd,
"An Estimator-Predictor Approach to PLL Loop Filter Design,"
The Telecommunications and Data Acquisition Progress Report 42-86: April Through June 1986,
pp. 77-89, August 15, 1986.

Stelzried, C., L. Efron, and J. Ellis,
"Halley Comet Missions,"
The Telecommunications and Data Acquisition Progress Report 42-87: July Through September 1986,
pp. 240-242, November 15, 1986.

Stelzried, C., and T. Howe,
"Giotto Mission Support,"
The Telecommunications and Data Acquisition Progress Report 42-87: July Through September 1986,
pp. 243-248, November 15, 1986.

Stelzried, C. T., R. A. Preston, C. E. Hildebrand, J. H. Wilcher, and J. Ellis,
"The Venus Balloon Project,"
The Telecommunications and Data Acquisition Progress Report 42-85: January Through March 1986,
pp. 191-198, May 15, 1986.

Stevens, R., R. L. Riggs, and B. Wood (Bendix Field Engineering Corporation),
"Pointing Calibration of the MKIVA DSN Antennas Voyager 2 Uranus Encounter Operations Support,"
The Telecommunications and Data Acquisition Progress Report 42-87: July Through September 1986,
pp. 206-239, November 15, 1986.

Trowbridge, D. L.,
"Block IIA Traveling-Wave Maser,"
The Telecommunications and Data Acquisition Progress Report 42-87: July Through September 1986,
pp. 158-164, November 15, 1986.

Truong, T. K., I. S. Hsu, J. J. Chang, H. C. Shyu (University of Southern California), and I. S. Reed (University of Southern California),
"A New VLSI Complex Integer Multiplier Which Uses a Quadratic-Polynomial Residue System With Fermat Numbers,"
The Telecommunications and Data Acquisition Progress Report 42-86: April Through June 1986,
pp. 155-163, August 15, 1986.

Truong, T. K., I. S. Hsu, H. M. Shao, I. S. Reed (University of Southern California), and H. C. Shyu (University of Southern California),
"A VLSI Pipeline Design of a Fast Prime Factor DFT on a Finite Field,"
The Telecommunications and Data Acquisition Progress Report 42-85: January Through March 1986,
pp. 42-52, May 15, 1986.

Ulvestad, J. S., C. D. Edwards, and R. P. Linfield,
"Very Long Baseline Interferometry Using a Radio Telescope in Earth Orbit,"
The Telecommunications and Data Acquisition Progress Report 42-88: October Through December 1986,
pp. 1-10, February 15, 1987.

Urech, J. M., A. Chamarro, J. L. Morales, and M. A. Urech,
"The Venus Balloon Project Telemetry Processing,"
The Telecommunications and Data Acquisition Progress Report 42-85: January Through March 1986,
pp. 199-211, May 15, 1986.

Veruttipong, T., J. Withington, V. Galindo-Israel, W. Imbriale, and D. Bathker,
"Design Considerations for the Beam-Waveguide Retrofit of a Ground Antenna Station,"
The Telecommunications and Data Acquisition Progress Report 42-87: July Through September 1986,
pp. 10-23, November 15, 1986.

Vilnrotter, V. A., and E. R. Rodemich,
"Table Look-Up Estimation of Signal and Noise
Parameters From Quantized Observables,"
*The Telecommunications and Data Acquisition
Progress Report 42-87: July Through September 1986,*
pp. 104-113, November 15, 1986.

Vilnrotter, V. A., E. R. Rodemich, and H. H. Tan,
"A Synchronization Technique for Optical PPM
Signals,"
*The Telecommunications and Data Acquisition
Progress Report 42-87: July Through September 1986,*
pp. 24-31, November 15, 1986.

Wackley, J. A.,
"The Deep Space Network Tracking System, Mark
IV-A, 1986,"
*The Telecommunications and Data Acquisition
Progress Report 42-85: January Through March 1986,*
pp. 139-146, May 15, 1986.

Wallace, R. J., and R. W. Burt,
"Deep Space Network Mark IVA Description,"
*The Telecommunications and Data Acquisition
Progress Report 42-86: April Through June 1986,*
pp. 255-260, August 15, 1986.

Wang, C. C.,
"An Algorithm to Design Finite Field Multipliers
Using a Self-Dual Normal Basis,"
*The Telecommunications and Data Acquisition
Progress Report 42-88: October Through
December 1986,*
pp. 79-90, February 15, 1987.

Wang, C. C.,
"A Generalized Algorithm to Design Finite Field
Normal Basis Multipliers,"
*The Telecommunications and Data Acquisition
Progress Report 42-87: July Through September 1986,*
pp. 125-139, November 15, 1986.

Wick, M. R.,
"Mark IVA DSN Receiver-Exciter and Transmitter
Subsystems,"
*The Telecommunications and Data Acquisition
Progress Report 42-85: January Through March 1986,*
pp. 147-156, May 15, 1986.

Wilcher, J., C. Stelzried, and S. Finley,
"Pathfinder Operations,"
*The Telecommunications and Data Acquisition
Progress Report 42-87: July Through September 1986,*
pp. 263-267, November 15, 1986.

Yeh, H.-G., and J. J. Chang,
"Systolic VLSI for Kalman Filters,"
*The Telecommunications and Data Acquisition
Progress Report 42-87: July Through September 1986,*
pp. 300-306, November 15, 1986.

Open Literature

Ancellet, G. M., M. J. Kavaya, R. T. Menzies, and A. M. Brothers,

"Lidar Telescope Overlap Function and Effects of Misalignment for Unstable Resonator Transmitter and Coherent Receiver,"

Applied Optics,
Vol. 25, No. 17, pp. 2886-2890, September 1, 1986.

Anderson, J. D., G. S. Levy, and N. A. Renzetti,
"Application of the Deep Space Network (DSN) to the Testing of General Relativity,"

Relativity in Celestial Mechanics and Astrometry,
pp. 329-344, 1986.

Anicich, V. G., W. T. Huntress, Jr., and M. J. McEwan,

"Ion-Molecule Reactions of Hydrocarbon Ions in C_2H_2 and HCN,"

Journal of Physical Chemistry,
Vol. 90, No. 11, pp. 2446-2450, 1986.

Appleby, J. F.,

"Radiative-Convective Equilibrium Models of Uranus and Neptune,"

Icarus,
Vol. 65, pp. 383-405, 1986.

Back, L. H., Y. I. Cho, and D. W. Crawford
(University of Southern California),

"Phasic and Spatial Pressure Measurements in a Femoral Artery Branch Model for Pulsatile Flow,"

Journal of Biomechanical Engineering,
Vol. 108, pp. 251-258, August 1986.

Back, L. H., J. D. Radbill, Y. I. Cho, and D. W. Crawford (University of Southern California),

"Measurement and Prediction of Flow Through a Replica Segment of a Mildly Atherosclerotic Coronary Artery of Man,"

Journal of Biomechanics,
Vol. 19, No. 1, pp. 1-17, 1986.

Baloga, S., and D. Pieri,

"Time-Dependent Profiles of Lava Flows,"

Journal of Geophysical Research,
Vol. 91, No. B9, pp. 9543-9552, August 10, 1986.

Banerdt, W. B.,

"Support of Long-Wavelength Loads on Venus and Implications for Internal Structure,"

Journal of Geophysical Research,
Vol. 91, No. B1, pp. 403-419, January 10, 1986.

Bankston, C. P., and L. H. Back,

"Measurements of the Response of Transport Aircraft Ceiling Panels to Fuel Fires,"

Journal of Aircraft,
Vol. 23, No. 3, pp. 207-212, March 1986.

Bard, S.,

"Improving Adsorption Cryocoolers by Multi-Stage Compression and Reducing Void Volume,"

Cryogenics,
Vol. 26, pp. 450-458, August/September 1986.

Barengoltz, J.,

"Calculating the Obscuration Ratio Due to Particle Surface Contamination,"

Journal of Environmental Sciences,
November/December 1986.

Bavassano, B. (Istituto di Fisica dello Spazio Interplanetario, Italy), and E. J. Smith,

"Radial Variation of Interplanetary Alfvénic Fluctuations: Pioneer 10 and 11 Observations Between 1 and 5 AU,"

Journal of Geophysical Research,
Vol. 91, No. A2, pp. 1706-1710, February 1, 1986.

Bavassano-Cattaneo, M. (Istituto di Fisica dello Spazio Interplanetario, Italy),

B. T. Tsurutani, E. J. Smith, and R. P. Lin (University of California, Berkeley),

"Subcritical and Supercritical Interplanetary Shocks: Magnetic Field and Energetic Particle Observations,"

Journal of Geophysical Research,
Vol. 91, No. A11, pp. 11,929-11,935, November 1, 1986.

Bellan, J., and K. Harstad,

"Evaluation of the Importance of the Relative Velocity During Evaporation of Drops in Sprays,"

International Journal of Heat Mass Transfer,
Vol. 29, No. 4, pp. 647-651, 1986.

Benumof, R. (College of Staten Island, New York),
and **J. Zoutendyk,**

"Theoretical Values of Various Parameters in the
Gummel-Poon Model of a Bipolar Junction
Transistor,"

Journal of Applied Physics,

Vol. 59, No. 2, pp. 636-644, January 15, 1986.

Bergman, L., A. Johnston, R. Nixon,
S. Esener (University of California, San Diego),
C. Guest (University of California, San Diego),
P. Yu (University of California, San Diego),
T. Drabik (University of California, San Diego),
M. Feldman (University of California, San Diego),
and **S. H. Lee** (University of California, San Diego),

"Applications and Design Considerations for
Optical Interconnects in VLSI,"

Optical Computing,

SPIE Vol. 625, pp. 117-126, 1986.

Bergman, L. A., W. H. Wu, A. R. Johnston,
R. Nixon, S. C. Esener (University of California,
San Diego), **C. C. Guest** (University of California,
San Diego), **P. Yu** (University of California,
San Diego), **T. J. Drabik** (University of California,
San Diego), **M. Feldman** (University of California,
San Diego), and **S. H. Lee** (University of California,
San Diego),

"Holographic Optical Interconnects for VLSI,"
Optical Engineering,

Vol. 25, No. 10, pp. 1109-1118, October 1986.

Blake, G. A. (California Institute of Technology),
V. G. Anicich, and **W. T. Huntress, Jr.,**
"Chemistry of Chlorine in Dense Interstellar
Clouds,"

Astrophysical Journal,

Vol. 300, No. 1, pp. 415-419, January 1, 1986.

Borchardt, G. C.,

"Star: A Computer Language for Hybrid AI
Applications,"

*Workshop on Coupling Symbolic and Numerical
Computing in Expert Systems, Bellevue,*

Washington, August 27-29, 1985,
pp. 169-177.

Bradley, J. G., D. B. Wittry (University of Southern
California), **J. M. Conley,** and **A. L. Albee**
(California Institute of Technology),

"An Electromagnetic/Electrostatic Dual Cathode
System for Electron Beam Instruments,"

Microbeam Analysis, Albuquerque, New Mexico,
August 10-15, 1986,
pp. 265-267.

Brown, L. L. (University of Massachusetts), and
M. P. Golombek,

"Block Rotations in the Rio Grande Rift, New
Mexico,"

Tectonics,

Vol. 5, No. 3, pp. 423-438, June 1986.

Buehler, M. G., and C. W. Hershey,

"The Split-Cross-Bridge Resistor for Measuring the
Sheet Resistance, Linewidth, and Line Spacing of
Conducting Layers,"

IEEE Transactions on Electron Devices,

Vol. ED-33, No. 10, pp. 1572-1579, October 1986.

Buehler, M. G., B. T. Moore, and R. H. Nixon,

"Parameter Extraction From Spaceborne
MOSFETs,"

IEEE Transactions on Nuclear Science,

Vol. NS-32, No. 6, pp. 4237-4243, December 1985.

Carder, K. L. (University of South Florida),

D. J. Collins, M. J. Perry (University of

Washington), **H. L. Clark** (National
Science Foundation, Washington, D.C.), **J.**

M. Mesias (Pontifica Universidad Catolica
de Chile, Chile), **J. S. Cleveland**

(University of Washington), and

J. Greenier (Iowa State University),

"The Interaction of Light with Phytoplankton in the
Marine Environment,"

*Ocean Optics VIII, Orlando, Florida, March 31-
April 2, 1986,*

SPIE Vol. 637, pp. 42-55.

Carsey, F. D., B. Holt, S. Martin (University of
Washington), **L. McNutt** (Radarsat, Ottawa,

Ontario, Canada), **D. A. Rothrock**

(University of Washington), **V. A. Squire**

(Scott Polar Research Institute, England),
and **W. F. Weeks,**

"Weddell-Scotia Sea Marginal Ice Zone
Observations From Space, October 1984,"

Journal of Geophysical Research,

Vol. 91, No. C3, pp. 3920-3924, March 15, 1986.

Carsey, F. D., and H. J. Zwally (NASA Goddard
Space Flight Center),

"Remote Sensing as a Research Tool,"

*Air-Sea Interaction, Maratea, Italy, September 28-
October 9, 1981,*

pp. 1021-1098.

- Cha, A. G.,**
"Physical Optics Analysis of a Four-Reflector Antenna,"
IEEE Transactions on Antennas and Propagation,
Vol. AP-34, No. 8, pp. 992-996, August 1986.
- Chen, C.P., and M. H. Leipold,**
"Crack Growth in Single-Crystal Silicon,"
Proceedings of 4th International Symposium on the Fracture Mechanics of Ceramics, Virginia Polytechnic Institute and State University, June 19-21, 1985,
Vol. 8, pp. 285-297.
- Cheng, L. -J., and A. Partovi,**
"Temperature and Intensity Dependence of Photorefractive Effect in GaAs,"
Applied Physics Letters,
Vol. 49, No. 21, pp. 1456-1458, November 24, 1986.
- Chi, C. -Y., D. G. Long, and F. -K. Li,**
"Radar Backscatter Measurement Accuracies Using Digital Doppler Processors in Spaceborne Scatterometers,"
IEEE Transactions on Geoscience and Remote Sensing,
Vol. GE-24, No. 3, pp. 426-437, May 1986.
- Chrisp, M. P., J. B. Breckinridge, S. A. Macenka, and N. A. Page,**
"Imaging Spectrometers for Remote Sensing from Space,"
Instrumentation for Optical Remote Sensing from Space, Cannes, France, November-December 1985,
SPIE Vol. 589, pp. 17-23.
- Clayton, R. M., and L. H. Back,**
"Thrust Improvement with Ablative Insert Nozzle Extension,"
Journal of Propulsion and Power,
Vol. 2, No. 1, pp. 91-93, January-February 1986.
- Collins, D. J., D. A. Kiefer (University of Southern California), J. B. SooHoo (University of Southern California), C. Stallings, (University of Southern California), and W. -L. Yang,**
"A Model for the Use of Satellite Remote Sensing for the Measurement of Primary Production in the Ocean,"
Ocean Optics VIII, Orlando, Florida, March 31-April 2, 1986,
SPIE Vol. 637, pp. 335-348.
- Coulter, D. R., A. Gupta, A. Yavrouian, G. W. Scott (University of California, Riverside), D. O'Connor (University of California, Riverside), O. Vogl (Polytechnic Institute of New York), and S. -C. Li (Polytechnic Institute of New York),**
"Electronic Energy Transfer and Quenching in Copolymers of Styrene and 2-(2'-Hydroxy-5'-vinylphenyl)-2H-benzotriazole: Photochemical Processes in Polymeric Systems, 10.,"
Macromolecules,
Vol. 19, No. 4, pp. 1227-1234, April 1986.
- Curlander, J. C.,**
"Performance of the SIR-B Digital Image Processing Subsystem,"
IEEE Transactions on Geoscience and Remote Sensing,
Vol. GE-24, No. 4, pp. 649-652, July 1986.
- Daud, T., and G. T. Crotty,**
"Dot Junction Solar Cells,"
Journal of Applied Physics,
Vol. 59, No. 7, pp. 2566-2570, April 1, 1986.
- Daud, T., and F. A. Lindholm (University of Florida),**
"Direct Experimental Determination of Voltage Across High-Low Junctions,"
Journal of Applied Physics,
Vol. 59, No. 1, pp. 285-287, January 1, 1986.
- Davis, Jr., L. (California Institute of Technology), and E. J. Smith,**
"New Models of Saturn's Magnetic Field Using Pioneer 11 Vector Helium Magnetometer Data,"
Journal of Geophysical Research,
Vol. 91, No. A2, pp. 1373-1380, February 1, 1986.
- Dickey, J. O., and T. M. Eubanks,**
"Earth Rotation and Polar Motion: Measurements and Implications,"
IEEE Transactions on Geoscience and Remote Sensing,
Vol. GE-23, No. 4, pp. 373-384, July 1985.
- Dickey, J. O., T. M. Eubanks, and J. A. Steppe,**
"High Accuracy Earth Rotation and Atmospheric Angular Momentum,"
NATO Advanced Research Workshop on Earth Rotation: Solved and Unsolved Problem, Bonas, France, June 1985,
pp. 137-162.

- Dickinson, R.,**
"SPS Revisited,"
Space Power,
Vol. 6, pp. 121–122, 1986.
- Diner, D. J., and J. F. Appleby,**
"Prospecting for Planets in Circumstellar Dust:
Sifting the Evidence From β Pictoris,"
Nature,
Vol. 322, No. 6078, pp. 436–438, July 31, 1986.
- Downs, G. S., and J. Krause-Polstorff,**
"JPL Pulsar Timing Observations. IV. Excess
Phase Noise,"
Astrophysical Journal Supplement Series,
Vol. 62, No. 1, pp. 81–107, September 1986.
- Dumas, K. A., A. Briglio, Jr., and L. J. Cheng,**
"Annealing Effects in Low- and High-Stress Silicon
Ribbon,"
Materials Research Symposium Proceedings,
Boston, Massachusetts, December 2–6, 1985,
pp. 395–400.
- Dunbar, R. S., and E. F. Tedesco,**
"Modeling Pluto-Charon Mutual Eclipse Events. I.
First-Order Models,"
Astronomical Journal,
Vol. 92, No. 5, pp. 1201–1209, November 1986.
- Elachi, C., J. B. Cimino, and M. Settle,**
"Overview of the Shuttle Imaging Radar-B
Preliminary Scientific Results,"
Science,
Vol. 232, pp. 1511–1516, June 20, 1986.
- El-Raheb, M., and P. Wagner,**
"Damped Response of Shells by a Constrained
Viscoelastic Layer,"
Journal of Applied Mechanics,
Vol. 108, pp. 902–908, December 1986.
- Elson, L. S.,**
"Ageostrophic Motions in the Stratosphere from
Satellite Observations,"
Journal of Atmospheric Sciences,
Vol. 43, No. 5, pp. 409–418, March 1, 1986.
- Eubanks, T. M., J. A. Steppe, and J. O. Dickey,**
"The El-Nino, the Southern Oscillation and the
Earth Rotation,"
*NATO Advanced Study Workshop on Earth
Rotation: Solved and Unsolved Problems, Bonas,
France, June 1985*,
pp. 163–186.
- Evans, D. L., T. G. Farr, J. P. Ford, T. W.
Thompson, and C. L. Werner,**
"Multipolarization Radar Images for Geologic
Mapping and Vegetation Discrimination,"
*IEEE Transactions on Geoscience and Remote
Sensing*,
Vol. GE-24, No. 2, pp. 246–257, March 1986.
- Farr, T. G., C. Elachi, P. Hartl (University of
Stuttgart, West Germany), and K. Chowdhury
(University of Stuttgart, West Germany),**
"Microwave Penetration and Attenuation in Desert
Soil: A Field Experiment with Shuttle Imaging
Radar,"
*IEEE Transactions on Geoscience and Remote
Sensing*,
Vol. GE-24, No. 4, pp. 590–594, July 1986.
- Federman, S. R.,**
"The 1088 Å Feature Toward Reddened Stars,"
Astrophysical Journal,
Vol. 309, pp. 306–310, October 1, 1986.
- Frankel, A., and R. W. Clayton (California
Institute of Technology),**
"Finite Difference Simulations of Seismic
Scattering: Implications for the Propagation of Short-
Period Seismic Waves in the Crust and Models of
Crustal Heterogeneity,"
Journal of Geophysical Research,
Vol. 91, No. B6, pp. 6465–6489, May 10, 1986.
- Freilich, M. H., and D. B. Chelton (Oregon State
University, Corvallis),**
"Wavenumber Spectra of Pacific Winds Measured
by the Seasat Scatterometer,"
Journal of Physical Oceanography,
Vol. 16, No. 4, pp. 741–757, April 1986.
- Friedl, R. R., J. H. Goble (Talandic Research
Corporation), and S. P. Sander,**
"A Kinetics Study of the Homogeneous and
Heterogeneous Components of the $\text{HCl} + \text{ClONO}_2$
Reaction,"
Geophysical Research Letters,
Vol. 13, No. 12, pp. 1351–1354, November 1986.
- Fu, L.-L.,**
"Mass, Heat and Freshwater Fluxes in the South
Indian Ocean,"
Journal of Physical Oceanography,
Vol. 16, No. 10, pp. 1683–1693, October 1986.

Giddings, A. E. (Sandia National Laboratories),
F. W. Hewlett (Sandia National Laboratories),
R. K. Treece (Sandia National Laboratories),
D. K. Nichols, L. S. Smith, and J. A. Zoutendyk,
"Single Event Upset Immune Integrated Circuits for
Project Galileo,"
IEEE Transactions on Nuclear Science,
Vol. NS-32, No. 6, pp. 4159-4163, December 1985.

Gillespie, A. R., A. B. Kahle, and R. E. Walker,
"Color Enhancement of Highly Correlated Images.
I. Decorrelation and HSI Contrast Stretches,"
Remote Sensing of Environment,
Vol. 20, pp. 209-235, 1986.

Gilman, D. A. (NASA), **K. C. Hurley** (Universite
Paul Sabatier), **A. E. Metzger, H. W. Schnopper**
(Danish Space Research Institute), **F. D. Seward**
(Smithsonian Astrophysical Observatory), and **J. D.**
Sullivan (Massachusetts Institute of Technology),
"An Upper Limit to X-Ray Emission from Saturn,"
Astrophysical Journal,
Vol. 300, No. 1, pp. 453-455, January 1, 1986.

Glazman, R. E.,
"Statistical Characterization of Sea Surface
Geometry for a Wave Slope Field Discontinuous in
the Mean Square,"
Journal of Geophysical Research,
Vol. 91, No. C5, pp. 6629-6641, May 15, 1986.

Golombek, M. P., and W. B. Banerdt,
"Early Thermal Profiles and Lithospheric Strength
of Ganymede from Extensional Tectonic Features,"
Icarus,
Vol. 68, pp. 252-265, 1986.

Grant, W. B.,
"He-Ne and cw CO₂ Laser Long-Path Systems for
Gas Detection,"
Applied Optics,
Vol. 25, No. 5, pp. 709-719, March 1, 1986.

Gray, D. L., R. J. Cesarone, C. L. Potts, K. Francis,
and S. E. Matousek,
"Voyager 2 Uranus Navigation Results,"
AIAA / AAS Astrodynamics Conference,
Williamsburg, Virginia, August 18-20, 1986,
pp. 144-151.

Greenhall, C. A.,
"Initializing a Flicker-Noise Generator,"
*IEEE Transactions on Instrumentation and
Measurement*,
Vol. IM-35, No. 2, pp. 222-224, June 1986.

Hadaegh, F. Y., and G. A. Bekey (University of
Southern California),
"Effects of Structural Error on the Estimates of
Parameters of Dynamical Systems,"
*Proceedings of the 1986 American Control
Conference, Seattle, Washington, June 18-20, 1986*,
pp. 917-924.

Hanner, M. S.,
"A Preliminary Look at the Dust in Comet Halley,"
Advances in Space Research,
Vol. 5, No. 12, pp. 325-334, 1985.

Hanner, M. S., and H. Campins (Planetary Science
Institute, Arizona),
"Thermal Emission from the Dust Coma of Comet
Bowell and a Model for the Grains,"
Icarus,
Vol. 67, pp. 51-62, 1986.

Hatakeyama, S., and M. -T. Leu,
"Reactions of Chlorine Nitrate with HCl and H₂O,"
Geophysical Research Letters,
Vol. 13, No. 12, pp. 1343-1346, November 1986.

Hayati, S. A., and G. P. Roston,
"Inverse Kinematic Solution for Near-Simple
Robots and Its Application to Robot Calibration,"
*IEEE International Symposium on Robot
Manipulators, Albuquerque, New Mexico, November
12-14, 1986*,
pp. 41-50.

Hecht, M. H., F. J. Grunthaner, B. B. Pate (Stanford
Synchrotron Radiation Laboratory), **P. Pianetta**
(Stanford Synchrotron Radiation Laboratory),
M. Engelhardt (Surface Science Laboratories),
W. Jansen (Surface Science Laboratories), and
C. Bryson (Surface Science Laboratories),
"Soft X-Ray Photoemission with the SSX-100
Spectrometer,"
*Nuclear Instruments and Methods in Physics
Research A*,
Vol. 246, pp. 806-809, 1986.

Hellings, R. W.,
"Relativistic Effects in Astronomical Timing
Measurements,"
Astronomical Journal,
Vol. 91, No. 3, pp. 650-659, March 1986.

Higdon, J. C.,
"Density Fluctuations in the Interstellar Medium:
Evidence for Anisotropic Magnetogasdynamic
Turbulence. II. Stationary Structures,"
Astrophysical Journal,
Vol. 309, No. 1, pp. 342–361, October 1, 1986.

**Higdon, J. C., and R. E. Lingenfelter (University of
California, San Diego),**
"Gamma-Ray Burst Size-Frequency Distributions:
Spectral and Temporal Selection Effects,"
Astrophysical Journal,
Vol. 307, No. 1, pp. 197–204, August 1, 1986.

**Holt, B., and F. I. Gonzalez (Pacific Marine
Environmental Laboratory, NOAA),**
"SIR-B Observations of Dominant Ocean Waves
Near Hurricane Josephine,"
Journal of Geophysical Research,
Vol. 91, No. C7, pp. 8595–8598, July 15, 1986.

Huang, J.,
"A Technique for an Array to Generate Circular
Polarization with Linearly Polarized Elements,"
IEEE Transactions on Antennas and Propagation,
Vol. AP-34, No. 9, pp. 1113–1124, September 1986.

**Iannone, M. (University of California, Riverside),
G. W. Scott (University of California, Riverside),
D. Brinza, and D. R. Coulter,**
"Gated Photochemical Hole Burning in
Photoadducts of Polyacenes,"
Journal of Chemical Physics,
Vol. 85, No. 9, pp. 4863–4866, November 1, 1986.

Ivins, E. R., and G. A. Lyzenga,
"Stress Patterns in an Interplate Shear Zone: An
Effective Anisotropic Model and Implications for the
Transverse Ranges, California,"
*Royal Society of London, Philosophical
Transactions Series A*,
Vol. 318, pp. 285–347, 1986.

Jin, M. Y.,
"Optimal Doppler Centroid Estimation for SAR Data
from a Quasi-Homogeneous Source,"
*IEEE Transactions on Geoscience and Remote
Sensing*,
Vol. GE-24, No. 6, pp. 1022–1025, November 1986.

**Johnson, W. T. K., and A. T. Edgerton (Hughes
Aircraft Company),**
"Venus Radar Mapper (VRM): Multimode Radar
System Design,"
*SPIE: Instrumentation for Optical Remote Sensing
from Space*,
SPIE Vol. 589, pp. 158–164, 1985.

Johnston, A. R., H. Kirkham, and B. T. Eng,
"DC Electric Field Meter with Fiber-Optic Readout,"
Review of Scientific Instruments,
Vol. 57, No. 11, pp. 2746–2753, November 1986.

Jones, D. L.,
"Evidence for Intrinsically Asymmetrical Radio
Structure in the Nucleus of NGC 6251,"
Astrophysical Journal,
Vol. 309, No. 1, pp. L5–L8, October 1, 1986.

**Jones, D. L., S. C. Unwin (California Institute of
Technology), A. C. S. Readhead (California
Institute of Technology), W. L. W. Sargent
(California Institute of Technology), G. A. Seielstad
(California Institute of Technology), R. S. Simon
(U.S. Naval Research Laboratory, Washington,
D.C.), R. C. Walker (National Radio Astronomy
Observatory), J. M. Benson (National Radio
Astronomy Observatory), R. A. Perley (National
Radio Astronomy Observatory), A. H. Bridle
(National Radio Astronomy Observatory), L. I.
Pauliny-Toth (Max-Planck-Institut fur
Radioastronomie), J. Romney (Max-Planck-Institut
fur Radioastronomie), A. Witzel (Max-Planck-
Institut fur Radioastronomie), P. N. Wilkinson
(Jodrell Bank), L. B. Baath (Onsala Space
Observatory), R. S. Booth (Onsala Space
Observatory), D. N. Fort (Algonquin Radio
Observatory), J. A. Galt (Dominion Radio
Astrophysical Observatory), R. L. Mutel (University
of Iowa), and R. P. Linfield,**
"High Dynamic Range VLBI Observations of NGC
6251,"
Astrophysical Journal,
Vol. 305, No. 2, pp. 684–697, June 15, 1986.

Kachare, R., and B. E. Anspaugh,
"Spatial Resolution and Nature of Defects Produced
by Low-Energy Proton Irradiation of GaAs Solar
Cells,"
Applied Physics Letters,
Vol. 49, No. 21, pp. 1459–1461, November 24, 1986.

- Katz, J.,**
 "Average Power Constraints in AlGaAs Semiconductor Lasers Under Pulse-Position-Modulation Conditions,"
Optics Communications,
 Vol. 56, No. 5, pp. 330–333, January 1, 1986.
- Katz, J.,**
 "Phase-Locked Arrays of Semiconductor Injection Lasers: A Review,"
Proceedings of the International Conference on Lasers '85, December 2–6, 1986,
 pp. 358–366.
- Kendall, J. M.,**
 "Experiments of Annular Liquid Jet Instability and on the Formation of Liquid Shells,"
Physics of Fluids,
 Vol. 29, No. 7, pp. 2086–2094, July 1986.
- Keyser, L. F.,**
 "Absolute Rate Constant and Branching Fractions for the $H + HO_2$ Reaction from 245 to 300 K,"
Journal of Physical Chemistry,
 Vol. 90, No. 13, pp. 2994–3003, 1986.
- Khakoo, M. A. (University of Windsor, Canada), and S. Trajmar,**
 "Elastic Electron Scattering Cross Sections for Molecular Hydrogen,"
Physical Review A,
 Vol. 34, No. 1, pp. 138–145, July 1986.
- Khakoo, M. A. (University of Windsor, Canada), and S. Trajmar,**
 "Electron-Impact Excitation of the $a^3\Sigma^+$, $B^1\Sigma^+$, $c^3\Pi_u$, and $C^1\Pi_u$ States of H_2 ,"
Physical Review A,
 Vol. 34, No. 1, pp. 146–156, July 1986.
- Kim, Q., A. Shumka, and J. Trask (Management and Services Technology Corp., Falls Church, Virginia),**
 "Effects of Excitation Intensity on the Photocurrent Response of Thin Film Silicon Solar Modules,"
Solar Cells,
 Vol. 18, pp. 61–69, 1986.
- Kim, S. S., R. H. Liang, F. -D. Tsay, and A. Gupta,**
 "Electron Spin Resonance Study of the Photooxidation Mechanism in Poly(*n*-butyl acrylate): Photochemical Processes in Polymeric Systems. 11,"
Macromolecules,
 Vol. 19, No. 7, pp. 1930–1935, 1986.
- Kissel, J. (Max-Planck-Institut für Kernphysik, Federal Republic of Germany), D. E. Brownlee (University of Washington), K. Buchler (Max-Planck-Institut für Kernphysik, Federal Republic of Germany), B. C. Clark (Martin Marietta, Denver), H. Fechtig (Max-Planck-Institut für Kernphysik, Federal Republic of Germany), E. Grun, (Max-Planck-Institut für Kernphysik, Federal Republic of Germany), K. Hornung (Technical College, Federal Republic of Germany), E. B. Igenbergs (Technical College, Federal Republic of Germany), E. K. Jessberger (Max-Planck-Institut für Kernphysik, Federal Republic of Germany), F. R. Krueger (Arheiliger Apotheke, Federal Republic of Germany), H. Kuczera (Messerschmitt-Bolkow-Blohm, Federal Republic of Germany), J. A. M. McDonnell (University of Kent, United Kingdom), G. M. Morfill (MPI Extraterrestrial Physics, Federal Republic of Germany), J. Rahe (University of Bamberg, Federal Republic of Germany), G. H. Schwehm (ESTEC, Noordwijk, The Netherlands), Z. Sekanina, N. G. Utterback (Dawn Laser Corporation, Santa Barbara, CA), H. J. Volk (University of Kent, United Kingdom), and H. A. Zook (NASA Johnson Space Center),**
 "Composition of Comet Halley Dust Particles from Giotto Observations,"
Nature,
 Vol. 321, No. 6067, pp. 336–337, May 15, 1986.
- Krishnakumar, E., and S. K. Srivastava,**
 "Radiative Lifetimes of B and $C^1\Sigma^+$ States of CO ,"
Astrophysical Journal,
 Vol. 307, No. 2, pp. 795–799, August 15, 1986.
- Kroger, P. M., J. M. Davidson, and E. C. Gardner (Kalamazoo College, Michigan),**
 "Mobile Very Long Baseline Interferometry and Global Positioning System Measurement of Vertical Crustal Motion,"
Journal of Geophysical Research,
 Vol. 91, No. B9, pp. 9169–9176, August 10, 1986.
- Landel, R. F., and S. T. J. Peng,**
 "Equations of State and Constitutive Equations,"
Journal of Rheology,
 Vol. 30, No. 4, pp. 741–765, 1986.
- Laskin, R. A., and S. W. Sirlin,**
 "Future Payload Isolation and Pointing System Technology,"
Journal of Guidance, Control, and Dynamics,
 Vol. 9, No. 4, pp. 469–477, July–August 1986.

Lawton, W. M.,
 "A Complete Spectral Characterization of Quarter-Plane Autoregressive Models,"
IEEE Transactions on Acoustics, Speech, and Signal Processing,
 Vol. ASSP-33, No. 6, pp. 1617-1619, December 1985.

Lebofsky, L. A. (University of Arizona), M. V. Sykes (University of Arizona), E. F. Tedesco, G. J. Veeder, D. L. Matson, R. H. Brown, J. C. Gradie (University of Hawaii), M. A. Feierberg (University of Maryland), and R. J. Rudy (Aerospace Corporation),
 "A Refined "Standard" Thermal Model for Asteroids Based on Observations of 1 Ceres and 2 Pallas,"
Icarus,
 Vol. 68, pp. 239-251, 1986.

Lee, C. P., and T. G. Wang,
 "A Theoretical Model for the Annular Jet Instability,"
Physics of Fluids,
 Vol. 29, No. 7, pp. 2076-2085, July 1986.

Lee, M. C., J. M. Kendall, Jr., P. A. Bahrami, and T. G. Wang,
 "Sensational Spherical Shells,"
Aerospace America,
 pp. 72-76, January 1986.

Lee, P. J.,
 "Computation of the Bit Error Rate of Coherent M -ary PSK with Gray Code Bit Mapping,"
IEEE Transactions on Communications,
 Vol. COM-34, No. 5, pp. 488-491, May 1986.

Lee, P. J.,
 "Further Results on Rate $1/N$ Convolutional Code Constructions with Minimum Required SNR Criterion,"
IEEE Transactions on Communications,
 Vol. COM-34, No. 4, pp. 395-399, April 1986.

Leung, P., A. C. Whittlesey, H. B. Garrett, and P. A. Robinson, Jr.,
 "Environment-Induced Electrostatic Discharges as the Cause of Voyager 1 Power-On Resets,"
Journal of Spacecraft and Rockets,
 Vol. 23, No. 3, pp. 323-330, May-June 1986.

Leung, W. W., and E. C. Baroth,
 "An Experimental Study Using Flow Visualization on the Effect of an Acoustic Field on Heat Transfer From Spheres,"
Symposium on Microgravity Fluid Mechanics, Anaheim, California, December 7-14, 1986,
 pp. 31-36.

Levy, G. S., R. P. Linfield, J. S. Ulvestad, C. D. Edwards, J. F. Jordan, Jr., S. J. Di Nardo, C. S. Christensen, R. A. Preston, L. K. Skjerve, L. R. Stavert, B. F. Burke (Massachusetts Institute of Technology), A. R. Whitney (Haystack Observatory), R. J. Cappallo (Haystack Observatory), A. E. E. Rogers (Haystack Observatory), K. B. Blaney (NASA Goddard Space Flight Center), M. J. Maher (Bendix Field Engineering Corp., Maryland), C. H. Ottenhoff (TRW), D. L. Jauncey (CSIRO, Sydney, Australia), W. L. Peters (Mount Stromlo Observatory, Australia), T. Nishimura (Institute for Space and Astronomical Science, Japan), T. Hayashi (Institute for Space and Astronomical Science, Japan), T. Takano (Institute for Space and Astronomical Science, Japan), T. Yamada (Institute for Space and Astronomical Science, Japan), H. Hirabayashi (Nobeyama Radio Observatory, Nobeyama, Japan), M. Morimoto (Nobeyama Radio Observatory, Nobeyama, Japan), M. Inoue (Nobeyama Radio Observatory, Nobeyama, Japan), T. Shiomi (Radio Research Laboratory, Japan), N. Kawaguchi (Radio Research Laboratory, Japan), and H. Kunitomi (Radio Research Laboratory, Japan),
 "Very Long Baseline Interferometric Observations Made with an Orbiting Radio Telescope,"
Science,
 Vol. 234, pp. 187-189, 1986.

Li, V. O. K., and T.-Y. Yan,
 "A Reliable Pipelining Protocol for the Message Service of the Mobile Satellite Experiment,"
IEEE INFOCOM '86 Conference, April 8-10, 1986,
 pp. 572-579.

Linfield, R. P.,
 "A Modified Hybrid Mapping Technique for VLBI Data,"
Astronomical Journal,
 Vol. 92, No. 1, pp. 213-218, July 1986.

Ling, H. (University of Illinois), Y. T. Lo (University of Illinois), and Y. Rahmat-Samii,
 "Reflector Sidelobe Degradation Due to Random Surface Errors,"
IEEE Transactions on Antennas and Propagation,
 Vol. AP-34, No. 2, pp. 164-172, February 1986.

Liu, H.-K., and T.-H. Chao,
 "Optical Image Subtraction Techniques, 1975-1985,"
Proceedings of SPIE: Hybrid Image Processing, Orlando, Florida, April 1-2, 1986,
 SPIE Vol. 638, pp. 55-65.

Liu, W. T.,
"Month-To-Month Variability of Ocean-Atmosphere Latent Heat Flux as Observed from the Nimbus Microwave Radiometer,"
Second Conference on Satellite Meteorology / Remote Sensing and Applications, Williamsburg, Virginia, May 13-16, 1986,
pp. 328-332.

Liu, W. T.,
"Statistical Relation Between Monthly Mean Precipitable Water and Surface-Level Humidity Over Global Oceans,"
Monthly Weather Review,
Vol. 114, No. 8, pp. 1591-1602, August 1986.

Luke, K. L. (California State University, Long Beach), and L. -J. Cheng,
"Characterization of the Heavily Doped Emitter and Junction Regions of Silicon Solar Cells Using an Electron Beam,"
Journal of Applied Physics,
Vol. 60, No. 7, pp. 2589-2595, October 1, 1986.

Lyell, M. J., and T. G. Wang,
"Oscillations of a Viscous Compound Drop,"
Physics of Fluids,
Vol. 29, No. 10, pp. 3481-3483, October 1986.

Lyzenga, G. A., and M. P. Golombek,
"North American-Pacific Relative Plate Motion in Southern California from Interferometry,"
Science,
Vol. 233, pp. 1181-1183, September 12, 1986.

Lyzenga, G. A., K. S. Wallace (University of Arizona), J. L. Fanselow, A. Raefsky, and P. M. Groth,
"Tectonic Motions in California Inferred From Very Long Baseline Interferometry Observations, 1980-1984,"
Journal of Geophysical Research,
Vol. 91, No. B9, pp. 9473-9487, August 10, 1986.

Mahindru, A.,
"Software Testing: A Way to Improve Software Reliability,"
IEEE Proceedings of the Fifth Annual International Phoenix Conference on Computers and Communications '86, Scottsdale, Arizona, March 26-28, 1986,
pp. 425-432.

Marderness, H. P.,
"Voyager Engineering Improvements for Uranus Encounter,"
AIAA / AAS Astrodynamics Conference, Williamsburg, Virginia, August 18-20, 1986,
pp. 152-167.

Marshall, W. K., and J. Katz,
"Direct Analysis of Gain-Guided Phase-Locked Semiconductor Laser Arrays,"
IEEE Journal of Quantum Electronics,
Vol. QE-22, No. 6, pp. 827-832, June 1986.

Mason, P. V., D. Petrac, D. D. Elleman, T. Wang, H. W. Jackson, D. J. Collins, P. Cowgill, and J. R. Gatewood,
"Preliminary Results of the Spacelab 2 Superfluid Helium Experiment,"
Advances in Cryogenic Engineering,
Vol. 31, pp. 869-879, Plenum Publishing Corporation, 1986.

May, R. D., and P. H. May (AT&T Bell Laboratories, New Jersey),
"Solid-State Radio Frequency Oscillator for Optogalvanic Spectroscopy: Detection of Nitric Oxide Using the 2-0 Overtone Transition,"
Review of Scientific Instruments,
Vol. 57, No. 9, pp. 2242-2245, September 1986.

McCleese, D. J., J. T. Schofield, R. W. Zurek, J. V. Martonchik, R. D. Haskins, D. A. Paige, R. A. West, D. J. Diner, J. R. Locke, M. P. Chrisp, W. Willis, C. B. Leovy (University of Washington), and F. W. Taylor (University of Oxford, United Kingdom),
"Remote Sensing of the Atmosphere of Mars Using Infrared Pressure Modulation and Filter Radiometry,"
Applied Optics,
Vol. 25, No. 23, pp. 4232-4245, December 1, 1986.

McConkey, J. W. (University of Windsor, Ontario, Canada), S. Trajmar, J. C. Nickel (University of California, Riverside), and G. Csanak (Los Alamos National Laboratory),
"A Polarisation Correlation Study of the Excitation of the $H_2d^3II_u(v_1 = 0, N_1 = 1)$ Level by Electron Impact,"
Journal of Physics B: Atomic Molecular Physics,
Vol. 19, pp. 2377-2392, 1986.

- McDonnell, J. A. M. (University of Kent, United Kingdom), W. M. Alexander (Baylor University), W. M. Burton (Rutherford Appleton Laboratory, United Kingdom), E. Bussoletti (University of Lecce, Italy), D. H. Clark (Science and Engineering Research Council, United Kingdom), R. J. L. Grard (Max-Planck-Institut für Kernphysik, Federal Republic of Germany), E. Grün (Max-Planck-Institut für Kernphysik, Federal Republic of Germany), M. S. Hanner, D. W. Hughes (University of Sheffield, United Kingdom), E. Igenbergs (Technical University of Munich, Federal Republic of Germany), H. Kuczera (Messerschmitt-Bölkow-Blohm, Federal Republic of Germany), B. A. Lindblad (Institute for Astronomy, Sweden), J. -C. Mandeville (ONERA/CERT-DERTS, France), A. Minafra (University of Bari, Italy), G. H. Schwehm (ESA Space Science Department, The Netherlands), Z. Sekanina, M. K. Wallis (University College Cardiff, United Kingdom), J. C. Zarnecki (University of Kent, United Kingdom), S. C. Chakaveh (University of Kent, United Kingdom), G. C. Evans (University of Kent, United Kingdom), S. T. Evans (University of Kent, United Kingdom), J. G. Firth (Rutherford Appleton Laboratory, United Kingdom), A. N. Littler (University of Kent, United Kingdom), L. Massonne (ESOC OAD, Federal Republic of Germany), R. E. Olearczyk (University of Kent, United Kingdom), G. S. Pankiewicz (University of Kent, United Kingdom), T. J. Stevenson (University of Kent, United Kingdom), and R. F. Turner (Rutherford Appleton Laboratory, United Kingdom), "Dust Density and Mass Distribution Near Comet Halley From Giotto Observations," *Nature*, Vol. 321, No. 6067, pp. 338–341, May 15, 1986.
- McLaughlin, W. L., and S. L. Miller, "Display of Celestial Surveys Conducted from Orbit," *Journal of Astronautical Sciences*, Vol. 34, No. 1, pp. 91–116, January–March 1986.
- McLaughlin, W. L., and D. M. Wolff, "Voyager at Uranus," *AIAA/AAS Astrodynamics Conference, Williamsburg, Virginia, August 18–20, 1986*, pp. 134–143.
- McRae, G. A., E. A. Cohen, M. B. Sponsler (California Institute of Technology), and D. A. Dougherty (California Institute of Technology), "Microwave Spectrum and Structure of Bicyclo [1.1.1] Pentanone and Comparison with Several Theoretical Structures," *Journal of Physical Chemistry*, Vol. 90, No. 24, pp. 6412–6415, 1986.
- Mendis, D. A. (University of California, San Diego), and B. T. Tsurutani, "The Spacecraft Encounters of Comet Halley," *Eos*, Vol. 67, No. 20, pp. 478–481, May 20, 1986.
- Menzies, R. T., "Doppler Lidar Atmospheric Wind Sensors: A Comparative Performance Evaluation for Global Measurement Applications from Earth Orbit," *Applied Optics*, Vol. 25, No. 15, pp. 2546–2553, August 1, 1986.
- Metzger, A. E., R. H. Parker (TRW), and J. Yellin (Hebrew University of Jerusalem, Israel), "High Energy Irradiations Simulating Cosmic-Ray-Induced Planetary Gamma Ray Production: I. Fe Target," *Journal of Geophysical Research*, Vol. 91, No. B4, pp. D495–D504, March 30, 1986.
- Mok, F. (California Institute of Technology), J. Diep (University of La Verne), H. -K. Liu, and D. Psaltis (California Institute of Technology), "Real-Time Computer-Generated Hologram by Means of Liquid-Crystal Television Spatial Light Modulator," *Optics Letters*, Vol. 11, No. 11, pp. 748–750, November 1986.
- Molina, L. T., and M. J. Molina, "Absolute Absorption Cross Sections of Ozone in the 185- to 350-nm Wavelength Range," *Journal of Geophysical Research*, Vol. 91, No. D13, pp. 14,501–14,508, December 20, 1986.
- Morabito, D. D., A. E. Niell (Haystack Observatory, Massachusetts), R. A. Preston, R. P. Linfield, A. E. Wehrle (UCLA), and J. Faulkner (University of Southern California), "VLBI Observations of 416 Extragalactic Radio Sources," *Astronomical Journal*, Vol. 91, No. 5, pp. 1038–1050, May 1986.
- Morabito, D. D., R. A. Preston, R. P. Linfield, M. A. Slade, and D. L. Jauncey (CSIRO, Sydney, Australia), "Arcsecond Positions for Milliarcsecond VLBI Nuclei of Extragalactic Radio Sources. IV. Seventeen Sources," *Astronomical Journal*, Vol. 92, No. 3, pp. 546–551, September 1986.

- Morris, R. B.,**
"Sequencing Voyager II for the Uranus Encounter,"
AIAA / AAS Astrodynamics Conference,
Williamsburg, Virginia, August 18-20, 1986,
pp. 168-177.
- Moynihan, P. I.,**
"Example of Second-Law Efficiency of Solar-Thermal Cavity Receivers,"
Journal of Solar Energy Engineering,
Vol. 108, pp. 67-74, February 1986.
- Nagasubramanian, G., S. Di Stefano, and J. Moacanin,**
"Determination of the Si-Conducting Polymer Interfacial Properties Using A-C Impedance Techniques,"
Journal of Electronic Materials,
Vol. 15, No. 1, pp. 21-25, 1986.
- Nagasubramanian, G., S. Di Stefano, and J. Moacanin,**
"Effect of Counterions on the Formation of Ohmic Contact Between p-Si and Poly(pyrrole) Film: An AC Impedance Analysis,"
Journal of Electrochemical Society,
Vol. 133, No. 2, pp. 305-309, February 1986.
- Nagasubramanian, G., S. Di Stefano, and J. Moacanin,**
"Electrochemical Incorporation of Poly(pyrrole) into Nafion and Comparison of the Electrochemical Properties of Nafion-Poly(pyrrole) and Poly(pyrrole) Films,"
Journal of Physical Chemistry,
Vol. 90, No. 18, pp. 4447-4451, 1986.
- Nash, D. B.,**
"Mid-Infrared Reflectance Spectra (2.3-22 μm) of Sulfur, Gold, KBr, MgO, and Halon,"
Applied Optics,
Vol. 25, No. 14, pp. 2427-2433, July 15, 1986.
- Neilson, G. F., M. C. Weinberg, and G. L. Smith,**
"Effect of OH Content on Phase Separation Behavior of Soda-Silica Glasses,"
Journal of Non-Crystalline Solids,
Vol. 82, pp. 137-142, 1986.
- Nelson, M. L. (University of Hawaii), T. B. McCord (University of Hawaii), R. N. Clark (U.S. Geological Survey, Colorado), T. V. Johnson, D. L. Matson, J. A. Mosher, and L. A. Soderblom (U.S. Geological Survey, Arizona),**
"Europa: Characterization and Interpretation of Global Spectral Surface Units,"
Icarus,
Vol. 65, pp. 129-151, 1986.
- Nelson, R. M., and W. D. Smythe,**
"Spectral Reflectance of Solid Sulfur Trioxide (0.25-5.2 μm): Implications for Jupiter's Satellite Io,"
Icarus,
Vol. 66, pp. 181-187, 1986.
- Nerad, B. A., and P. J. Shlichta,**
"Ground-Based Experiments on the Minimization of Convection During the Growth of Crystals from Solution,"
Journal of Crystal Growth,
Vol. 75, pp. 591-608, 1986.
- Neugebauer, M., C. J. Alexander, R. Schwenn (Max-Planck-Institut fur Aeronomie, Federal Republic of Germany), and A. K. Richter (Max-Planck-Institut fur Aeronomie, Federal Republic of Germany),**
"Tangential Discontinuities in the Solar Wind: Correlated Field and Velocity Changes and the Kelvin-Helmholtz Instability,"
Journal of Geophysical Research,
Vol. 91, No. A12, pp. 13,694-13,698, December 1, 1986.
- Nouhi, A., and R. J. Stirn,**
"Highly Conducting ZnSe Films by Reactive Magnetron Sputtering,"
Journal of Vacuum Science and Technology A,
Vol. 4, No. 3, pp. 403-407, May/June 1986.
- Orient, O. J., and A. Chutjian,**
"Comparison of Calculated and Experimental Thermal Attachment Rate Constants for SF_6 in the Temperature Range 200-600 K,"
Physical Review A,
Vol. 34, No. 3, pp. 1841-1846, September 1986.
- Orton, G. S.,**
"Thermal Spectrum of Uranus: Implications for Large Helium Abundance,"
Science,
Vol. 231, pp. 836-840, February 21, 1986.

- Paris, J. F.,**
 "The Effect of Leaf Size on the Microwave Back-scattering by Corn,"
Remote Sensing of Environment,
 Vol. 19, pp. 81-95, 1986.
- Paris, J. F.,**
 "Probing Thick Vegetation Canopies with a Field Microwave Scatterometer,"
IEEE Transactions on Geoscience and Remote Sensing,
 Vol. GE-24, No. 6, pp. 886-893, November 1986.
- Parthasarathy, S. P., E. Y. Kwack, and L. H. Back,**
 "Reply to 'Comments on 'Sound Generation by Flow Over Relatively Deep Cylindrical Cavities'" [J. Acoust. Soc. Am. 80, 1530-1531 (1986)],"
Journal of the Acoustical Society of America,
 Vol. 80, No. 5, pp. 1531-1532, November 1986.
- Pei, D. Y., C. C. Wang, and J. K. Omura,**
 "Normal Basis of Finite Field $GF(2^m)$,"
IEEE Transactions on Information Theory,
 Vol. IT-32, No. 2, pp. 285-287, March 1986.
- Penzo, P. A., and H. L. Mayer,**
 "Tethers and Asteroids for Artificial Gravity Assist in the Solar System,"
Journal of Spacecraft and Rockets,
 Vol. 23, No. 1, pp. 79-82, January 1986.
- Pravdo, S. H., F. E. Marshall (NASA Goddard Space Flight Center), N. E. White (EXOSAT Observatory, West Germany), and P. Giommi (EXOSAT Observatory, West Germany),**
 "X-Rays From the Magnetic White Dwarf PG 1658+441,"
Astrophysical Journal,
 Vol. 300, No. 2, pp. 819-823, January 15, 1986.
- Rahmat-Samii, Y.,**
 "Microwave Holography of Large Reflector Antennas—Simulation Algorithms,"
IEEE Transactions on Antennas and Propagation,
 Vol. AP-33, No. 11, pp. 1194-1203, November 1985.
- Rajan, R. S., G. Lugmair (University of California, San Diego), A. S. Tamhane (Tata Institute, India), and G. Poupeau (CBPF, Rio de Janeiro, Brazil),**
 "Nuclear Tracks, Sm Isotopes and Neutron Capture Effects in the Elephant Moraine Shergottite,"
Geochimica et Cosmochimica Acta,
 Vol. 50, pp. 1039-1042, 1986.
- Redman, R. O., T. B. H. Kuiper, J. J. Lorre, and J. E. Gunn,**
 "The Dust and Gas Surrounding LkH α 101,"
Astrophysical Journal,
 Vol. 303, No. 1, pp. 300-310, April 1, 1986.
- Register, D. F. (Phillips Petroleum Company), L. Vuskovic (Institute of Physics, Yugoslavia), and S. Trajmar,**
 "Elastic Electron Scattering Cross Sections for Xe in the 1-100 eV Impact Energy Region,"
Journal of Physics B: Atomic Molecular Physics,
 Vol. 19, pp. 1685-1697, 1986.
- Richardson, W., E. Garmire (University of Southern California), and L. Maleki,**
 "Degenerate Four-Wave Mixing in a Mercury-Argon Discharge,"
Optics Letters,
 Vol. 11, No. 9, pp. 572-574, September 1986.
- Rider, D. M., J. T. Schofield, J. S. Margolis, and D. J. McCleese,**
 "Electrooptic Phase Modulation Gas Correlation Spectroscopy: A Laboratory Demonstration,"
Applied Optics,
 Vol. 25, No. 17, pp. 2860-2862, September 1, 1986.
- Rock, B. N., J. E. Vogelmann, D. L. Williams (NASA Goddard Space Flight Center), A. F. Vogelmann, and T. Hoshizaki,**
 "Remote Detection of Forest Damage,"
BioScience,
 Vol. 36, No. 7, pp. 439-445, July/August 1986.
- Roschke, E. J.,**
 "Solar Dynamic Systems for Spacecraft Power Applications,"
AIAA 24th Aerospace Sciences Meeting, Reno, Nevada, January 6-9, 1986,
 pp. 1-10.
- Sander, S. P.,**
 "Kinetics and Mechanism of the IO + IO Reaction,"
Journal of Physical Chemistry,
 Vol. 90, No. 10, pp. 2194-2199, 1986.
- Sander, S. P.,**
 "Temperature Dependence of the NO₃ Absorption Spectrum,"
Journal of Physical Chemistry,
 Vol. 90, No. 17, pp. 4135-4142, 1986.

Sander, S. P., and C. C. Kircher (UNOCAL Science and Technology Division, Brea, CA),
"Temperature Dependence of the Reaction
 $\text{NO} + \text{NO}_3 \rightarrow 2\text{NO}_2$,"
Chemical Physics Letters,
Vol. 126, No. 2, pp. 149–152, May 2, 1986.

Saunders, R. S.,
"Soviets and Americans Work Together,"
Geotimes,
pp. 20–21, June 1986.

Sekanina, Z.,
"Effects of the Law for Nongravitational Forces on
the Precession Model of Comet Encke,"
Astronomical Journal,
Vol. 91, No. 2, pp. 422–431, February 1986.

Sekanina, Z.,
"Nucleus Studies of Comet Halley,"
Advances in Space Research,
Vol. 5, No. 12, pp. 307–316, 1985.

Sekanina, Z., and S. M. Larson (University of Arizona),
"Coma Morphology and Dust-Emission Pattern of
Periodic Comet Halley. IV. Spin Vector Refinement
and Map of Discrete Dust Sources for 1910,"
Astronomical Journal,
Vol. 92, No. 2, pp. 462–482, August 1986.

Sekanina, Z., and S. M. Larson (University of Arizona),
"Dust Jets in Comet Halley Observed by Giotto and
from the Ground,"
Nature,
Vol. 321, No. 6067, pp. 357–361, May 15, 1986.

Seraji, H.,
"Design of Feedforward-Cascade Controllers for
Multivariable Systems,"
Proceedings of the American Control Conference,
Seattle, Washington, June 18–20, 1986,
pp. 1347–1353.

Seraji, H.,
"Linear Multivariable Control of Robot
Manipulators,"
*Proceedings of the IEEE International Conference
on Robotics and Automation, San Francisco,*
California, April 7–10, 1986,
pp. 565–571.

Shih, C.-F., J. C. Chen, and J. Garba,
"Vibration of a Large Space Beam Under Gravity
Effect,"
AIAA Journal,
Vol. 24, No. 7, pp. 1213–1216, July 1986.

Shlichta, P. J.,
"Feasibility of Mapping Solution Properties During
the Growth of Protein Crystals,"
Journal of Crystal Growth,
Vol. 76, pp. 656–662, 1986.

Simon, M. K.,
"Dual-Pilot Tone Calibration Technique,"
IEEE Transactions on Vehicular Technology,
Vol. VT-35, No. 2, pp. 63–70, May 1986.

Sipes, Jr., D. L.,
"Mars to Earth Optical Communication Link for the
Proposed Mars Sample Return Mission Roving
Vehicle,"
*Optical Technologies for Communication Satellite
Applications*,
SPIE Vol. 616, pp. 77–81, 1986.

**Slavin, J. A., B. A. Goldberg, E. J. Smith, D. J.
McComas (Los Alamos National Laboratory), S. J.
Bame (Los Alamos National Laboratory), M. A.
Strauss (University of California, Berkeley), and H.
Spinrad (University of California, Berkeley),**
"The Structure of a Cometary Type I Tail: Ground-
Based and ICE Observations of P/Giacobini-
Zinner,"
Geophysical Research Letters,
Vol. 13, No. 11, pp. 1085–1088, November 1986.

Slavin, J. A., G. Jungman, and E. J. Smith,
"The Interplanetary Magnetic Field During Solar
Cycle 21: ISEE-3/ICE Observations,"
Geophysical Research Letters,
Vol. 13, No. 6, pp. 513–516, June 1986.

**Slavin, J. A., and Y. Kamide (Kyoto Sangyo
University, Japan),**
"Solar Wind-Magnetosphere Coupling:
Introduction,"
*Proceedings of Solar Wind Magnetosphere Coupling
Conference, Pasadena, California, February 1985,*
pp. ix–xii.

Slavin, J. A., E. J. Smith, D. G. Sibeck (University of California, Los Angeles), D. N. Baker (Los Alamos National Laboratory), R. D. Zwickl (Los Alamos National Laboratory), S. I. Akasofu (University of Alaska), and R. P. Lepping (Goddard Space Flight Center),
"Solar Wind-Magnetosphere Coupling and the Distant Magnetotail: ISEE-3 Observations,"
Solar-Wind Magnetosphere Coupling,
pp. 717-730, 1986.

Slavin, J. A., E. J. Smith, B. T. Tsurutani, G. L. Siscoe (University of California, Los Angeles), D. E. Jones (Brigham Young University), and D. A. Mendis (University of California, San Diego),
"Giacobini-Zinner Magnetotail: ICE Magnetic Field Observations,"
Geophysical Research Letters,
Vol. 13, No. 3, pp. 283-286, March 1986.

Smith, E. J., J. A. Slavin, and B. T. Thomas (University of Bristol, United Kingdom),
"The Heliospheric Current Sheet: 3-Dimensional Structure and Solar Cycle Changes,"
The Sun and the Heliosphere in Three Dimensions,
pp. 267-274, D. Reidel Publishing Company.

Smith, E. J., and B. T. Thomas (University of Bristol, United Kingdom),
"Latitudinal Extent of the Heliospheric Current Sheet and Modulation of Galactic Cosmic Rays,"
Journal of Geophysical Research,
Vol. 91, No. A3, pp. 2933-2942, March 1, 1986.

Smith, E. J., B. T. Tsurutani, J. A. Slavin, D. E. Jones (Brigham Young University), G. L. Siscoe (University of California, Los Angeles), and D. A. Mendis (University of California, San Diego),
"International Cometary Explorer Encounter with Giacobini-Zinner: Magnetic Field Observations,"
Science,
Vol. 232, pp. 382-385, April 18, 1986.

Stachnik, R. A., L. T. Molina, and M. J. Molina,
"Pressure and Temperature Dependences of the Reaction of OH with Nitric Acid,"
Journal of Physical Chemistry,
Vol. 90, No. 12, pp. 2777-2780, 1986.

Stephenson, R. R.,
"The Galileo Attitude and Articulation Control System: A Radiation-Hard, High Precision, State-of-the-Art Control System,"
Proceedings of the Tenth IFAC Symposium, Toulouse, France, June 24-28, 1985,
pp. 83-90.

Stiegman, A. E., and D. R. Tyler (University of Oregon),
"Reactivity of Seventeen- and Nineteen-Valence Electron Complexes in Organometallic Chemistry,"
Comments on Inorganic Chemistry,
Vol. 5, No. 5, pp. 215-245, 1986.

Stirn, R. J., and A. Nouhi,
"Low-Temperature Deposition of Low Resistivity ZnSe Films by Reactive Sputtering,"
Applied Physics Letters,
Vol. 48, No. 26, pp. 1790-1792, June 30, 1986.

Stromberg, W. D., and T. G. Farr,
"A Fourier-Based Textural Feature Extraction Procedure,"
IEEE Transactions on Geoscience and Remote Sensing,
Vol. GE-24, No. 5, pp. 722-731, September 1986.

Synnott, S. P.,
"Evidence for the Existence of Additional Small Satellites of Saturn,"
Icarus,
Vol. 67, pp. 189-204, 1986.

Synnott, S. P., A. J. Donegan, J. E. Riedel, and J. A. Stuve,
"Interplanetary Optical Navigation: Voyager Uranus Encounter,"
AIAA / AAS Astrodynamics Conference, Williamsburg, Virginia, August 18-20, 1986,
pp. 192-206.

Taylor, T. H., R. A. Jacobson, S. P. Synnott, G. D. Lewis, J. E. Riedel, and D. C. Roth,
"Orbit Determination for the Voyager II Uranus Encounter,"
AIAA / AAS Astrodynamics Conference, Williamsburg, Virginia, August 18-20, 1986,
pp. 178-191.

Thakoor, S., H. G. LeDuc, A. P. Thakoor, J. Lambe, and S. K. Khanna,
"Room Temperature Deposition of Superconducting NbN for Superconductor-Insulator-Superconductor Junctions,"
Journal of Vacuum Science and Technology A,
Vol. 4, No. 3, pp. 528–531, May/June 1986.

Thakoor, S. (California Institute of Technology), D. M. Strayer, G. J. Dick (California Institute of Technology), and J. E. Mercereau (California Institute of Technology),
"A Lead-on-Sapphire Superconducting Cavity of Superior Quality,"
Journal of Applied Physics,
Vol. 59, No. 3, pp. 854–858, February 1, 1986.

Thomas, B. T. (University of Bristol, United Kingdom), B. E. Goldstein, and E. J. Smith,
"The Effect of the Heliospheric Current Sheet on Cosmic Ray Intensities at Solar Maximum: Two Alternative Hypotheses,"
Journal of Geophysical Research,
Vol. 91, No. A3, pp. 2889–2895, March 1, 1986.

Thomas, B. T. (University of Bristol, United Kingdom), J. A. Slavin, and E. J. Smith,
"Radial and Latitudinal Gradients in the Interplanetary Magnetic Field: Evidence for Meridional Flux Transport,"
Journal of Geophysical Research,
Vol. 91, No. A6, pp. 6760–6764, June 1, 1986.

Thomas, R. H.,
"Satellite Remote Sensing Over Ice,"
Journal of Geophysical Research,
Vol. 91, No. C2, pp. 2493–2502, February 15, 1986.

Toth, R. A.,
"Frequencies of N_2O in the 1100- to 1440- cm^{-1} Region,"
Journal of the Optical Society of America B,
Vol. 3, No. 10, pp. 1263–1281, October 1986.

Trajmar, S., J. C. Nickel (University of California, Riverside), and T. Antoni (University of Kaiser-Slautern, West Germany),
"Electron-Impact Ionization of Laser-Excited $^{138}\text{Ba}(\dots 5p^6 6s 6p)$ and $^{138}\text{Ba}(\dots 5p^6 6s 5d)$ Atoms,"
Physical Review A,
Vol. 34, No. 6, pp. 5154–5157, December 1986.

Trinh, E., J. Robey, N. Jacobi, and T. Wang,
"Dual-Temperature Acoustic Levitation and Sample Transport Apparatus,"
Journal of Acoustical Society of America,
Vol. 79, No. 3, pp. 604–612, March 1986.

Trinh, E. H., and C. Hsu,
"Equilibrium Shapes of Acoustically Levitated Drops,"
Journal of Acoustical Society of America,
Vol. 79, No. 5, pp. 1335–1338, May 1986.

Trinh, E. H., and C. J. Hsu,
"Acoustic Levitation Methods for Density Measurements,"
Journal of Acoustical Society of America,
Vol. 80, No. 6, pp. 1757–1761, December 1986.

Tsurutani, B. T., B. E. Goldstein, M. E. Burton, and D. E. Jones (Brigham Young University),
"A Review of the ISEE-3 Geotail Magnetic Field Results,"
Planetary and Space Science,
Vol. 34, No. 10, pp. 931–960, 1986.

Tsurutani, B. T., and E. J. Smith,
"Hydromagnetic Waves and Instabilities Associated with Cometary Ion Pickup: Ice Observations,"
Geophysical Research Letters,
Vol. 13, No. 3, pp. 263–266, March 1986.

Tsurutani, B. T., and E. J. Smith,
"Strong Hydromagnetic Turbulence Associated with Comet Giacobini-Zinner,"
Geophysical Research Letters,
Vol. 13, No. 3, pp. 259–262, March 1986.

Ulvestad, J. S.,
"Radio Properties of Type 1.8 and 1.9 Seyfert Galaxies,"
Astrophysical Journal,
Vol. 310, No. 1, pp. 136–144, November 1, 1986.

Ulvestad, J. S., and R. R. J. Antonucci (Space Telescope Science Institute, Maryland),
"Blazars with Arcminute-Scale Radio Halos,"
Astronomical Journal,
Vol. 92, No. 1, pp. 6–11, July 1986.

Utku, S. (Duke University, North Carolina), and M. Salama,
"Parallel Solution of Closely Coupled Systems,"
International Journal for Numerical Methods in Engineering,
Vol. 23, pp. 2177-2186, 1986.

Vasquez, R. P. (University of Southern California), A. Madhukar (University of Southern California), F. J. Grunthaner, and M. L. Naiman (Massachusetts Institute of Technology),
"Distribution of Nitrogen and Defects in $\text{SiO}_x\text{N}_y/\text{Si}$ Structures Formed by the Thermal Nitridation of SiO_2/Si ,"
Journal of Applied Physics,
Vol. 59, No. 3, pp. 972-975, February 1, 1986.

Vasquez, R. P. (University of Southern California), A. Madhukar (University of Southern California), F. J. Grunthaner, and M. L. Naiman (Massachusetts Institute of Technology),
"An X-Ray Photoelectron Spectroscopy Study of the Thermal Nitridation of SiO_2/Si ,"
Journal of Applied Physics,
Vol. 60, No. 1, pp. 226-233, July 1, 1986.

Vogelmann, J. E., and B. N. Rock,
"Assessing Forest Decline in Coniferous Forests of Vermont Using NS-001 Thematic Mapper Simulator Data,"
International Journal of Remote Sensing,
Vol. 7, No. 10, pp. 1303-1321, 1986.

von Roos, O., and K. -L. Wang,
"Conversion Losses in GaAs Schottky-Barrier Diodes,"
IEEE Transactions on Microwave Theory and Techniques,
Vol. MIT-34, No. 1, pp. 183-187, January 1986.

Wang, C. C., and T. -Y. Yan,
"Combined Coding and Delay-Throughput Analysis for Fading Channels of Mobile Satellite Communications,"
IEEE International Conference on Communications, Toronto, Canada, June 22-25, 1986,
pp. 1409-1414.

Wang, Y.,
"Scattering from Mirrors Contaminated by Particulates: A Model,"
Applied Optics,
Vol. 25, No. 23, pp. 4222-4223, December 1, 1986.

Weinberg, M. C.,
"Are Gel-Derived Glasses Different from Ordinary Glasses?"
Material Research Society Symposium Proceedings,
Vol. 73, pp. 431-441, 1986.

Weinberg, M. C.,
"On the Location of the Maximum Homogeneous Crystal Nucleation Temperature,"
Journal of Non-Crystalline Solids,
Vol. 83, pp. 98-113, 1986.

Weinberg, M. C.,
"On the Possibility of Diffusionally Driven Oscillations in Two Component Gas Bubbles in Fluids,"
Chemical Engineering Science,
Vol. 41, No. 9, pp. 2333-2340, 1986.

Weinberg, M. C.,
"Physical Data Measurements and Mathematical Modelling of Simple Gas Bubble Experiments in Glass Melts,"
Journal of Non-Crystalline Solids,
Vol. 84, pp. 159-165, 1986.

Weinberg, M. C., G. L. Smith, and G. F. Neilson,
"Glass Formation and Crystallization of High Lead Content $\text{PbO-B}_2\text{O}_3$ Compositions,"
American Ceramic Society Bulletin,
Vol. 65, No. 11, pp. 1502-1505, November 1986.

Weissman, P. R.,
"Are Cometary Nuclei Primordial Rubble Piles?"
Nature,
Vol. 320, No. 6059, pp. 242-244, March 20, 1986.

West, R. A., D. F. Strobel (Johns Hopkins University), and M. G. Tomasko (University of Arizona),
"Clouds, Aerosols, and Photochemistry in the Jovian Atmosphere,"
Icarus,
Vol. 65, No. 2/3, pp. 161-217, February/March 1986.

Williams, I. D., A. Chutjian, and R. J. Mawhorter,
"Differential Electron Scattering Cross Sections for the First Optically Forbidden and Resonance Transitions in Mg II , Zn II and Cd II ,"
Journal of Physics B: Atomic Molecular Physics,
Vol. 19, pp. 2189-2198, 1986.

Williams, R. M., G. Nagasubramanian, S. K. Khanna, C. P. Bankston, A. P. Thakoor, and T. Cole,

"The Role of Oxygen in Porous Molybdenum Electrodes for the Alkali Metal Thermoelectric Converter,"

Journal of Electrochemical Society,

Vol. 133, No. 8, pp. 1587–1595, August 1986.

Willson, R. C., H. S. Hudson (University of California, San Diego), C. Frohlich (World Radiation Center, Switzerland), and R. W. Brusa (World Radiation Center, Switzerland),

"Long-Term Downward Trend in Total Solar Irradiance,"

Science,

Vol. 234, pp. 1114–1117, November 28, 1986.

Woiceshyn, P. M., M. G. Wurtele (University of California, Los Angeles), D. H. Boggs (dB Systems, Ltd., La Canada, California), L. F. McGoldrick (Johns Hopkins University), and S. Peteherych (Atmospheric Environment Service, Canada),

"The Necessity for a New Parameterization of an Empirical Model for Wind/Ocean Scatterometry,"

Journal of Geophysical Research,

Vol. 91, No. C2, pp. 2273–2288, February 15, 1986.

Wong, E. C.,

"In-Flight Identification of the Galileo Spacecraft Flexible Mode Characteristics,"

Journal of Guidance, Control, and Dynamics,

Vol. 9, No. 1, pp. 92–98, January–February 1986.

Wood, L. J.,

"Orbit Determination Singularities in the Doppler Tracking of a Planetary Orbiter,"

Journal of Guidance, Control, and Dynamics,

Vol. 9, No. 4, pp. 485–494, July–August 1986.

Yeomans, D. K.,

"The Intermediate Comets and Nongravitational Effects,"

Astronomical Journal,

Vol. 91, No. 4, pp. 971–973, April 1986.

Yeomans, D. K., J. Rahe (NASA Headquarters), and R. S. Freitag (Library of Congress, Washington, D.C.),

"The History of Comet Halley,"

Journal of Royal Astronomical Society of Canada,

Vol. 80, No. 2, pp. 62–86, 1986.

Zak, M.,

"Chaotic Instability in the Three-Body Problem,"

Acta Mechanica,

Vol. 61, pp. 203–208, 1986.

Zak, M.,

"Closure in Turbulence Theory Using Stabilization Principle,"

Physics Letters A,

Vol. 118, No. 3, pp. 139–143, October 6, 1986.

Zak, M.,

"Criteria of Chaos in Non-Linear Mechanics,"

International Journal of Non-Linear Mechanics,

Vol. 21, No. 3, pp. 175–182, 1986.

Zak, M.,

"Deterministic Representation of Chaos in Turbulence,"

Physica D,

Vol. 18, pp. 486–487, 1986.

Zak, M.,

"On the Lagrangian Turbulence in Continua,"

Physics Letters A,

Vol. 115, No. 8, pp. 373–376, May 5, 1986.

Zebker, H. A., and R. M. Goldstein,

"Topographic Mapping From Interferometric Synthetic Aperture Radar Observations,"

Journal of Geophysical Research,

Vol. 91, No. B5, pp. 4993–4999, April 10, 1986.

Zoutendyk, J. A., L. S. Smith, G. A. Soli,

P. Thieberger, and H. E. Wegner,

"Single-Event Upset (SEU) Model Verification and Threshold Determination Using Heavy Ions in a Bipolar Static RAM,"

IEEE Transactions on Nuclear Science,

Vol. NS-32, No. 6, pp. 4164–4169, December 1985.

Zurek, R. W.,

"Atmospheric Tidal Forcing of the Zonal-Mean Circulation: The Martian Dusty Atmosphere,"

Journal of Atmospheric Sciences,

Vol. 43, No. 7, pp. 652–670, April 1, 1986.

Zurek, R. W.,

"The Form of Newtonian Cooling in Atmospheric Tidal Theory,"

Pageoph,

Vol. 123, pp. 921–929, 1985.

Zurek, R. W.,
"The Relations Between the Linear and Bilinear
Atmospheric Tidal Fields in Geometric Height and
in Log-Pressure Coordinates,"
Pageoph,
Vol. 123, pp. 902–920, 1985.